

# **SNOHOMISH BASIN MITIGATION BANK**

## **MITIGATION BANKING INSTRUMENT**

### **SUBMITTED BY:**

Habitat Bank, LLC  
15600 NE 173<sup>rd</sup> St  
Woodinville, WA 98077  
(425) 785-8428

### **PREPARED BY:**

Talasaea Consultants, Inc.  
15020 Bear Creek Rd  
Woodinville, WA 98077  
(425) 861-7550

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## 1.0 INTRODUCTION

Section 404 of the Clean Water Act (CWA) (33 USC 1344 et seq.) and Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) authorize the Department of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill material into waters of the United States, including wetlands and other special aquatic sites, and for activities in, or affecting, navigable waters of the United States. The Department of the Army, through its U. S. Army Corps of Engineers (USACE) Regulatory Program, makes decisions to issue or deny permits based on a public interest review (33 CFR Parts 320-330) and, for activities subject to regulation under Section 404, compliance with the U.S. Environmental Protection Agency's (EPA) "Guidelines for the Specification of Disposal Sites for Dredged and Fill Material" (40 CFR Part 230), known as the Section 404(b)(1) guidelines.

The Washington Department of Ecology (DOE) regulates wetlands under the State Water Pollution Control Act and the Shoreline Management Act and provides technical assistance to other agencies that regulate wetlands under separate statutes, such as the Hydraulic Code (Washington Department of Fish and Wildlife). In addition, DOE provides technical assistance to local governments under the Growth Management Act. The DOE and other state agencies use the State Environmental Policy Act (SEPA) process as a mechanism to identify potential wetland-related concerns early in the permitting process.

These government agencies generally require mitigation for adverse impacts to the aquatic environment associated with regulated activities. The Council on Environmental Quality has defined mitigation to include avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts. For those impacts that remain after taking appropriate steps to avoid and minimize adverse impacts, appropriate and practicable compensatory mitigation is required to offset those remaining unavoidable impacts. Compensatory mitigation includes restoring, enhancing, creating, and preserving the aquatic system functions that would be lost or impaired due to an authorized activity. Compensatory mitigation may be implemented to offset the adverse impacts of one or more authorized projects within a single consolidated mitigation project. Consolidated mitigation projects, such as mitigation banks, may result in greater overall environmental benefit than those achieved with numerous small, individual mitigation projects and are usually more cost-effective to implement.

Guidance pertaining to the type and extent of mitigation that may be required by the USACE is provided in the February 6, 1990, "Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act 404(b)(1) Guidelines." This memorandum of agreement emphasizes the importance of a national goal to achieve an overall no net loss of the nation's remaining wetlands base and notes, without providing further guidance, that mitigation banking may be an acceptable form of compensatory mitigation under certain conditions.

On November 28, 1995, six federal agencies jointly issued detailed guidance, "Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks", that details how mitigation banks can be used to satisfy the mitigation requirements of the Section 404(b)(1) guidelines. This federal guidance defines mitigation banking as the restoration, enhancement, creation, and, in exceptional circumstances, preservation undertaken to compensate in advance and at one location for adverse impacts to the aquatic ecosystem. Mitigation banking can be an appropriate form of compensatory mitigation when other forms of mitigation cannot be practicably achieved at the impact site or would not be as environmentally beneficial. Many federal, state and local agencies recognize that mitigation banking can benefit the aquatic ecosystem, as well as permit applicants, regulatory and natural resources agencies, and the general public.

The Washington Department of Ecology by order of the State Legislature has developed a set of draft Mitigation Banking regulations. In the 2004 legislature the DOE was authorized to start a mitigation bank pilot program to evaluate the draft rules. The SBMB is part of the DOE mitigation bank pilot program.

Snohomish County through Title 30.62.375 of the Unified Development Code, allows for wetland mitigation banking when approved by the Director of Planning and Development Services, in accordance with the criteria set forth in SCC 30.62.375 subsection 2 to provide wetland mitigation as required by chapter 30.62 SCC.

King County, through administrative rules codified in King County Code (KCC) 21A.24.345, established the criteria governing the creation and use of wetland mitigation banks in the county to compensate for unavoidable impacts to wetlands, in accordance with the Metropolitan King County Council's directive.

The Federal, State and Local agencies who ultimately are signatories to this Instrument are hereafter referred to as the Mitigation Bank Review Team (MBRT).

Habitat Bank, LLC (HB), proposes to develop a wetland mitigation bank, the Snohomish Basin Mitigation Bank (SBMB), by restoring and enhancing wetlands, other aquatic resources, and riparian habitat on 225 acres in Snohomish County, Washington (**Figure 1**) to generate marketable wetland mitigation credits. The SBMB lies near the confluence of the Snoqualmie and Skykomish Rivers in what was historically a large wetlands complex, supported by flooding along the Snoqualmie River and, to a lesser extent, the Skykomish River. Over the last 100 years the site has been cleared, leveled, drained with ditches and subsurface drainage tiles, protected by flood gates and pumps, and placed under agricultural production (truck crops and, more recently, pasture). The general goal of mitigation at the SBMB site is to restore hydrology to drained former wetlands, enhance the hydrology of partially drained farmed wetlands, and restore native vegetation communities, including forested wetlands, scrub-shrub wetlands, wet meadow, marsh, vegetated shallows, stream channels, and ponds.

## **2.0 LEGAL AUTHORITY**

The SBMB is established in accordance with the following federal and state statutes, regulations, guidelines, and policies:

- Clean Water Act (33 USC 1251 et seq.)
- Regulatory Program of the U.S. Army Corps of Engineers (33 CFR Parts 320-331)
- U. S. Army Corps of Engineers Regulatory Guidance Letter 02-2
- Guidelines for the Specification of Disposal Sites for Dredged and Fill Material (40 CFR Part 230)
- Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (February 6, 1990)
- Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks (60 FR 58605-58614, November 28, 1995)
- National Environmental Policy Act (42 USC 4321 et seq.)
- Council on Environmental Quality Procedures for Implementing the National Environmental Policy Act (40 CFR Part 1500-1508)
- Executive Order 11990 (Protection of Wetlands)

- Executive Order 11988 (Protection of Floodplains)
- Fish and Wildlife Coordination Act (16 USC 661 et seq.)
- Fish and Wildlife Service Mitigation Policy (46 FR 7644-7663, 1981)
- Endangered Species Act (16 USC 1531 et seq.)
- National Historic Preservation Act, as amended (16 USC 470)
- State of Washington Mitigation Banking Statute RCW 90-84
- Washington State Environmental Policy Act ('SEPA' RCW 43.21C and WAC 197-11)
- Growth Management Act (RCW 36.70A) and Critical Areas Regulations "Best Available Science" compliance WAC 365-195-900 to 925)
- SEPA/GMA integration
- Washington State Water Pollution Control Act (RCW 90.48)
- Washington State Hydraulic Code (RCW 75.20 and Hydraulic Permit Approval)
- Washington State Shoreline Management Act (RCW 90.58, WAC 173-200) as amended
- Washington State Salmon Recovery Act (RCW 75.46)
- Washington State Alternative Mitigation Policy, developed by Ecology, Washington State Department of Transportation (WSDOT), Washington Department of Fish and Wildlife (WDFW), and the Office of Community Development (OCD), 2000.
- Washington State Aquatic Resources Act (RCW 79.90, RCW 90.74)
- Wetlands Mitigation Banking (RCW 90.84)
- Washington State's Draft Rule on Wetland Mitigation Banking (WAC 173-300, Compensatory Wetland Mitigation Banking)
- Snohomish County Critical Areas Code 30.62 SCC
- King County Sensitive Areas Ordinance (SAO) Title 21A.24.345
- King County Wetland Mitigation Banking Regulations (PUT 8-11, 1999)

Nothing in the agreement shall be construed as altering the requirements of, and agency responsibilities pursuant to, these laws, regulations, and policies.

### **3.0 SCOPE OF THIS MITIGATION BANKING INSTRUMENT**

This mitigation banking instrument (MBI), which was prepared in accordance with "Federal Guidance for the Establishment, Use and Operation of Mitigation Banks," shall serve as the detailed implementation plan for the establishment and operation of the Snohomish Basin Mitigation Bank (SBMB) near Monroe, in Snohomish County, Washington. The terms and provisions of this MBI will be incorporated into a Memorandum of Agreement (MOA) that will govern the relationship between HB and the regulatory agencies having jurisdiction over, and/or substantial interest in, the SBMB. That MOA shall also serve as the "Memorandum of Agreement" and "Implementation Manual" per Snohomish County regulations and, when combined with the initial SBMB Prospectus, As-Built Report, and Performance Monitoring Reports, shall constitute the "Implementation Plan" per King County Regulations. Under that MOA, HB shall:

- Implement and maintain the SBMB as specified in the MOA and this MBI;
- Protect in perpetuity the 225-acre SBMB through development of a conservation easement;
- Maintain accounting records for the SBMB; and
- Monitor the SBMB for gains in aquatic ecosystem functions and values and implement corrective actions, as needed, to ensure that the SBMB achieves the performance standards established in this MBI.

The following agencies participated in the development of the banking instrument:

- U.S. Army Corps of Engineers, Seattle District (USACE)
- U.S. Environmental Protection Agency (EPA)
- Washington State Department of Ecology (Ecology)
- Washington State Department of Fish and Wildlife (WDFW)
- Washington State Department of Natural Resources, Aquatic Resources Division (DNR)
- Snohomish County (SC)
- King County (KC)

The USACE and the Washington State Department of Ecology, as co-chairs of the MBRT, each hold independent authority to make final decisions regarding terms and conditions of this MBI if consensus among the MBRT members cannot otherwise be reached within a reasonable time frame.

#### **4.0 BUSINESS PURPOSE AND ECOLOGICAL GOALS OF THE BANK**

The purpose of the SBMB is to generate mitigation credits for projects that will have an adverse impact on the aquatic environment and need to compensate for those impacts as a condition of their permits. Impacts that could be compensated for by the SBMB include those to wetlands, streams and critical area buffers. The goal of the SBMB will be to provide more extensive, higher quality, and more cost-effective restoration and enhancement of aquatic resources than can typically be achieved by other forms of compensatory mitigation. The goal of the SBMB is to provide permit applicants greater flexibility in compensating for unavoidable adverse impacts to the aquatic ecosystem in an ecologically beneficial manner.

The environmental goals of the SBMB are to:

- A. Provide for the replacement of the chemical, physical, and biological functions of wetlands and other aquatic resources that are lost or degraded as a result of authorized impacts;
- B. Provide a net gain in high quality, sustainable wetland and aquatic ecosystem function and acreage, through restoration and enhancement of the site.
- C. Consolidate mitigation for authorized aquatic ecosystem impacts into a single large, environmentally significant site in advance of impacts that use the site for mitigation.
- D. Provide high quality refuge and off-channel rearing habitat for federally-listed and state priority fish species.

#### **5.0 LOCATION AND BASELINE CONDITIONS OF THE SBMB SITE**

The proposed project is located in very close proximity to the Snoqualmie River in the east half of Section 35 and the west half of Section 36, Township 27 North, Range 6 East, in Snohomish County, Washington. The site is located approximately 4.6 miles south of Monroe and 2.7 miles northwest of Duvall (**Figure 1**). The site is east of High Bridge Road and lies in the 100-year floodway of the Snoqualmie River. In general, the SBMB ranges in elevation between 25 and 38 feet above sea level; the lowest elevation on the site (22 feet), is at the bottom of the primary drainage canal. The SBMB encompasses a depressional area that under natural conditions was frequently flooded by the Snoqualmie

River. The area has been diked, ditched, tiled, and protected by a floodgate since approximately 1910. The site is bordered on three sides by agricultural land and to the east by a relatively undisturbed forested wetland with a pond, used as a hunting club.

The local geology of the SBMB area is the direct result of glaciation (up until 10,000 years ago) and more recently, the work of the Snoqualmie River. Since the last glacial retreat, the river has been eroding, transporting, depositing, and sorting these glacial deposits. The topography of the SBMB area is primarily alluvial in nature with features such as the historic floodplain, abandoned channel meanders, meander scars, levees, and terraces all built and/or maintained by the river.

The vast majority of the soils on the alluvial bottomlands of the SBMB formed under an aquic or peraquic moisture regime (saturated in the upper part of the soil to create reducing conditions). Predominant soil textures range from sandy loam to sandy clay loam. These soils are very deep, have slow permeability, and are artificially drained. A large portion of the SBMB area is underlain by highly decomposed peat soils, which is indicative of a pre-existing stable wetland ecosystem.

Historically the primary sources of hydrology in the SBMB area included: 1) flooding by the Snoqualmie River, 2) groundwater flow parallel to the river, 3) lateral groundwater flow from the watershed surrounding the site, 4) surface water inflow, and 5) direct precipitation. Today an extensive network of subsurface drainage tiles and surface drainage ditches has effectively drained the majority of the SBMB area, thereby eliminating wetland hydrology. A flood control berm and floodgate preclude flooding of the site by the river, except during Snoqualmie River flows exceeding 34 feet in elevation. At least two streams naturally flowed through the SBMB area prior to European settlement of the site. These streams were relocated and converted to drainage ditches during agricultural development of the site. Flow within these ditches or channels, is augmented by groundwater discharge, seeps and springs along the west margin of the site. The streams, which enter the site from culverts under High Bridge road and from the south through the main ditch, are classified as Type 4 and 5 streams by Washington State and Snohomish County Code due to their small size and lack of fish access. Currently 6400' of these streams cross the site while confined to drainage ditches. To efficiently remove water from the site these streams plus other sources of water such as seeps and drainage tiles are all channeled via constructed ditches into a main south to north ditch which runs from King County in the south, north into Pearson Eddy through the flood control structure.

Prior to European settlement of the SBMB site, the alluvial bottomlands of the Snoqualmie River were covered by a mosaic of scrub-shrub wetlands with inclusions of forested wetlands, wet meadows, marsh, and aquatic beds. Today, the site is covered exclusively by pasture grasses (**Table 1**).

Small areas of low quality wetlands still exist on the SBMB mostly associated with old river channel depressions, abandoned ditches, and the very lowest portions of the site (**Figure 2**). Most of the SBMB has been effectively drained and wetland hydrology eliminated. Approximately 28 acres, or 12.4% of the site, retains wetland hydrology and are considered farmed wetlands. The balance of the site is comprised of natural upland and drained former wetlands.

Given the relatively homogeneous vegetation and lack of horizontal and vertical structural diversity of the SBMB area, wildlife species diversity is relatively low on the SBMB site. Species common to agricultural fields are typical of the SBMB site. Currently, no salmonid species are able to gain access to the SBMB site, except during overbank flood events, due to the obstruction provided by the Pearson Eddy floodgate and flood control berm. According to State records and databases, there are no known priority species or habitats, rare plants, or high quality ecosystems on the SBMB site.



**Table 1A. Summary of Existing and Proposed Conditions for the SBMB by Phase.** Table 1A shows the area of expected wetland hydrology restored per phase, the SBMB will restore 135.4 acres of new Category II wetlands to the national wetland inventory. Table 1B shows the mix of different habitat types restored to the site from the current condition in acres and length of stream restoration in linear feet.

RESTORATION PHASE	Existing Conditions (acres)			Proposed Conditions (acres)		
	Effectively Drained Wetlands and Other Uplands	Farmed Wetland	Total	Wetland	Upland	Stream and Riparian
Phase 1	36.4	4.4	40.8	21.6	19.2	0
Phase 2	96.2	18.8	115.0	99.9	15.1	0
Phase 3	64.6	4.6	69.2	39.3	27.5	2.4
<b>Total Acres</b>	<b>197.2</b>	<b>27.8</b>	<b>225.0</b>	<b>160.8</b>	<b>61.8</b>	<b>2.4</b>

**Table 1B.**

HABITAT	Existing Conditions (acres)			Proposed Conditions (acres)			
	Effectively Drained Wetlands and Other Uplands	Farmed Wetland	Total	Phase 1	Phase 2	Phase 3	Total
Perimeter Buffer	0	0	0	5.9	5.3	11.4	22.6
Floodplain Upland	0	0	0	15.3	12.0	16.1	43.4
Forested Wetland	0	0	0	6.8	14.4	11.7	32.9
Scrub-Shrub Wetland	0	0	0	4.2	20.4	16.2	40.8
Emergent Wetland (wet meadow, marsh)	0	0	0	8.4	59.8	13.5	81.7
Aquatic Bed Wetland	0	0	0	0.2	3.1	0.3	3.6
Pasture	197.2	27.8	225.0	0	0	0	0
<b>Total Acres</b>	<b>197.2</b>	<b>27.8</b>	<b>225.0</b>	<b>40.8</b>	<b>115.0</b>	<b>69.2</b>	<b>225.0</b>
Stream Channel (linear feet)	0	0	6400lf	0	6600lf	2400lf	9000lf

Professional judgment based on training and experience in the application of several methods (WET, HGM, HEP, and SAM) was used to assess wetland and buffer functioning at the SBMB site. Additional detail on the baseline conditions and functions can be found in the Critical Areas Report for the Snohomish Basin Mitigation Bank

**Table 2** summarizes existing wetland functions and predicts the relative extent of these functions with implementation of this Bank. A substantial increase in function is expected to result, generally rising from low values, to moderate to high values. This “ecological lift” forms the basis for bank credits that may compensate for future impacts to wetlands, streams, buffers, and other resources in the service area.

**Table 2. Summary of Wetland Functional Assessment Under Existing Conditions and with Project Implementation.**

WETLAND FUNCTION	EXISTING CONDITION	WITH PROJECT IMPLEMENTATION
Groundwater Recharge	Low	Moderate to High
Groundwater Discharge	Low to Moderate	Moderate to High
Flood Storage and De-synchronization	Moderate	Moderate to High
Shoreline Anchoring and Dissipation of Erosive Forces	Low to Moderate	Very High
Sediment Trapping	Low to Moderate	Moderate to High
Nutrient/Pollutant Retention, Removal, Transformation, and/or Transport	Low	Moderate to High
Food Chain Support	Very Low to Low	Moderate to High
Wildlife and Fish Habitat	Very Low to Low	High to Very High
OVERALL	Low	Moderate to High

Baseline conditions for fish will be evaluated in Pearson Eddy between the floodgates and the main stem of the Snoqualmie River and then behind the flood gates on the bank site. These baseline conditions can be compared in the future with fish use of the established wetland system to determine the overall benefit of the Bank to salmon, bull trout and other fish species.

## 6.0 SITE DEVELOPMENT PLAN

### 6.1 Description of Proposed Activities

Given that the SBMB site has been drained, protected from flooding, and converted to agriculture, the general goal of mitigation design is to restore and enhance wetland hydrology and replant the area with native wetland plants to provide a variety of wetland types. Forested wetlands would be comprised of three strata of native species (forest, shrub, and groundcover), scrub-shrub wetlands would have two layers (shrub and groundcover), while wet meadow, marsh, and aquatic bed areas would be comprised of one layer. The proposed elevations and hydrologic regimes for the proposed wetland types are summarized in **Table 3**. The mitigation construction and planting plans are shown in **Figures 3 - 9 of 11**.

Given the general goals of the mitigation design, the following actions are proposed:

- Eliminate current dairy operations, including use of the bottomland pastures by cattle.
- De-commission subsurface drains and drainage ditches.

- Excavate two linear basins to create meander scar-like topographic features with attendant wetland cover types.
- Spread salvaged topsoil over the graded areas to provide an effective root growth medium and seed source for revegetation.
- Provide wildlife habitat features such as seasonally ponded areas, woody material, brush piles, snags, nesting boxes, etc.
- Restore the streams that once traversed the SBMB area and connect them to Pearson Eddy through a fish-passable structure.
- Re-establish salmonid rearing and holding habitat in and along the restored streams that traverse the SBMB area.
- Re-plant all disturbed soil with plantings and seed mixes comprised of indigenous trees, shrubs, grasses, and forbs.
- Allow the river to backflood the SBMB area through Pearson Eddy.
- Provide effective stream shading by planting native streamside riparian tree and shrub species.
- Plant native trees and shrubs indigenous to the project area in designated cover type areas at a sufficient density to facilitate desired horizontal and vertical structure.
- Establish and maintain upland buffers (where appropriate) and screening buffers around the margin of the wetlands mitigation area.
- Monitor and control noxious weeds including reed canary grass, purple loosestrife, Japanese knotweed and Himalayan blackberry.

**Table 3. Target Hydrology**

Cover Type	Ground Elevation ft.	Target Hydrology			
		Depth ft.	Duration	Frequency of inundation	Period
Forested Wetland	29-30	0.0	1 day	50%	Nov-March
Scrub-shrub wetland	27-30	0.0	14 days	100%	Nov-March
Wet Meadow	26-28	0-1.0	21 days	100%	Nov-April
Marsh	24-26	1.0-3.0	270 days	100%	Year-round
Aquatic Bed	<24	>3.0	365 days	100%	Year-round

The primary goal of the restoration and enhancement activities on the SBMB is to re-establish a high quality, self-sustaining wetland environment. Although a shallow water table will exist across the SBMB area, the site will have a complex, difficult-to-predict hydrology because there will be many variables affecting water level, and surface flooding provided by the Snoqualmie River occurs on a somewhat random basis. The expected area of restored wetland hydrology is shown in **Figure 11**. Portions of phase 2 will be a mix of wetlands and small hummocks with shrub scrub cover that may have very small areas with upland conditions, this area has been classified as wetland in the proposed conditions. HB acknowledges that its efforts are primarily to “jump start” the natural restoration process and that natural forces, will ultimately shape the character of the site once construction is complete. After the initial 10 year monitoring period it will be acceptable for the weir structure to be replaced by beaver dams or other natural structures.

## 6.2 Construction Phasing

The SBMB will be completed in three phases to minimize financial risk and to match credit availability with credit demand. Areas planned for each phase of restoration are shown in **Figure 9**.

Phase One involves approximately 41 acres in the SE corner of the SBMB site that contains a significant portion of the higher elevation ground that will be restored to forested and scrub-shrub wetlands. This area requires minimal grading and no permits. HB has started this restoration to test different planting and maintenance techniques and to jump start development of the forest canopy structure.

Phase Two, scheduled to go to construction in 2005, will focus on restoring the hydrology and topographic variability to approximately 115 acres of the lower elevation portions of the site, and to establishing surface water flow in a new meandering stream channel connected to Pearson Eddy. The main ditch and flood gates at Pearson Eddy will remain in operation for at least one season to allow stream channel plantings to establish. After one season, the small creeks coming off the hillside to the west and south of the SBMB and the main ditch from the south will be diverted to the restored stream channel.

In Phase Three, scheduled to go to construction in 2010, depending upon credit demand, HB will add higher elevation scrub-shrub wetlands around the southwest and west sides of the SBMB and enhance an old meander scar on the south side of the SBMB. The two main streams flowing into the SBMB through ditches from the South and West will be restored to more natural conditions. Unneeded segments of the main ditch will be partially filled and converted into aquatic bed and marsh cover types.

With the MBRT's approval, a portion of Phase Three could be included in the Phase Two construction if buffer credit demand warrants early restoration of buffer.

## 6.3 Site Development

The following steps will be taken to implement the SBMB site development plan for each phase of construction:

### 1) Remove livestock

The first step in implementing the proposed site development plan will be to discontinue dairy operations, which will involve eliminating livestock grazing and liquid manure disposal on the pastures that will be restored to wetlands and/or enhanced. Mowing or grazing of pastures may continue temporarily to help control noxious weeds.

### 2) Designate construction plans on the ground

The areas that will be restored in each phase of the mitigation process will be surveyed, flagged, and staked in the field prior to initiating work. These include areas to be cut and filled during the grading process, holding areas for topsoil, planting areas for specific cover types, etc.

### 3) Implement temporary surface runoff, erosion, and sediment control BMP measures

All areas with exposed soils will be managed and protected with Best Management Practices (BMPs) to minimize surface water runoff, erosion, and sedimentation per the Snohomish County grading permit and grading regulations. A temporary erosion and sediment control plan (TESCP) will be implemented immediately prior to and during all phases of SBMB construction. Upon completion of grading and

planting activities, a storm water pollution prevention plan (SWPPP) will be implemented to protect critical areas

**4) Plant areas that do not need to be graded and/or that can be protected during the subsequent steps in the site development plan**

Areas of the SBMB that do not require grading or a high degree of manipulation, such as the higher elevations in the interior of the site, will be planted as soon as feasible following discontinuance of dairy operations. These areas will primarily be planted with trees and shrubs as specified under Section 6.5. Late summer or early fall reed canary grass control with glyphosate will be required in these areas to eliminate competition for the plantings.

**5) The grading plan will be staked in the field**

The final grading plan will be staked in the field with specific reference points monumented for ease of relocation. Staking will identify both the horizontal locations and vertical positions of graded landforms and the various cover types (**Figure 3**).

**6) Site grading**

Construction of the SBMB will involve a wide range of grading activities, including temporary removal of topsoil, filling in drainage ditches, reconstructing stream channels, excavating depressions for new aquatic bed and marsh wetlands, and building up areas for forested and scrub-shrub wetlands. Once grading has been completed, salvaged topsoil will be re-spread over the finished land surfaces. At least six inches of topsoil will be applied. Grading will be accomplished with a variety of equipment including crawler-tractors, earthmovers, backhoes, graders, and dump trucks. The use of such equipment will be restricted to specific work areas and precluded from sensitive areas. Depths and elevations of graded surfaces will be carefully monitored and survey checked to ensure that the site development plan is correctly implemented.

**7) Salvage of topsoil**

No topsoil will be imported to the site. The residual soils are very fertile and suitable for effective revegetation of the SBMB area. At least 8 inches of topsoil will be stockpiled for re-application to the graded surfaces.

**8) Wildlife habitat features**

Wildlife habitat features will be installed following the application of the topsoil. These features will include down woody material (e.g., root wads, stumps, logs, etc.), brush piles, snags, and bird nest boxes. Downed woody material will be placed in upland buffers, forested wetlands, and scrub-shrub wetlands, as well as on the banks of relocated streams. The SBMB is subject to regular flooding and additional woody material will be moved regularly onto the site by floodwaters once enough plant structure forms to restrain larger material.

**9) Planting**

The SBMB will be revegetated to forested wetland, scrub-shrub wetland, wet meadow, marsh, aquatic bed wetland, and riverine/stream cover types. All plant materials will be native, locally adapted species purchased from one or more commercial nurseries. The aquatic bed cover type will not require specific plantings as appropriate species will naturally pioneer the areas through transport of seeds on birds and other animals as well as seed transported by moving water. Species have been selected based on the following criteria: 1) adaptation to specific water regime, 2) value to wildlife, 3) value as barrier or buffer vegetation, 4) pattern of growth, 5) native to this type of wetland in western Washington, and 6) cost and availability. A list of candidate plant species, from which the planted species must be selected,

is presented in **Appendix A**. The approximate planting densities and locations are shown in the Conceptual Site Planting Plan (**Figure 8**).

**a. Forested Buffers, Forested Wetland, and Scrub-Shrub**

Establishment of forested buffers and wetlands, as well as scrub-shrub wetlands, will involve planting native trees and shrubs as selected from the candidate plant list. Shrub and tree planting in the mitigation area will include live stake, bare root, balled-and-burlapped, and containerized stock. Once the topsoil has been prepared and habitat features placed, the forested and scrub-shrub stock will be planted. In general, woody stock will be planted at a density of 500 trees and shrubs per acre, with regular spacing for ease of maintenance. The planting densities and locations are shown in the Site Planting Plan (**Figure 8**).

**b. Wet Meadow**

Planting of wet meadow will primarily involve the application of a seed mix comprised of native forb species selected from the candidate plant list. The seed can either be drilled, broadcast or hydroseeded, with the seed application rate adjusted accordingly. In addition, wet meadow plant plugs may also be applied in the wetter areas.

**c. Marsh**

Planting of marsh will primarily involve the application of marsh plant plugs. In addition, marsh areas will be seeded with a marsh seed mix comprised of species from the candidate plant list.

**10) Irrigation**

A temporary aboveground irrigation system may be installed as necessary. However watering is not likely to be required since natural flooding and a high water table will maintain effective soil moisture during the growing season.

**11) Construction Management**

A pre-construction meeting will be held on-site to review and discuss all aspects of the mitigation project prior to beginning construction. The SBMB sponsor, a representative from Snohomish County, the project manager, the contractor, and interested MBRT members will attend the meeting. A qualified wetland consultant, landscape architect, and/or restoration specialist will supervise construction to ensure that the objectives and specifications of this plan are met.

**12) Post-Construction Assessment**

A post-construction assessment will be conducted upon completion of each phase of the mitigation work and a report, including as-built drawings, and confirmation of key (high and low) elevations will be submitted to the MBRT. The purpose of this assessment will be to determine whether the site conditions are consistent with the approved plan and to establish baseline conditions for future monitoring.

**13) Performance Monitoring**

A performance monitoring program will be implemented to determine the degree of success of the mitigation effort. Monitoring shall include conducting periodic surveys and site evaluations until HB can demonstrate to the satisfaction of the MBRT that all performance standards have been achieved. Monitoring will include measurements and observations of site stabilization, wetland hydrology, vegetal cover, plant survival, vegetation structure and species composition, functional values, and weed invasion.

#### **14) Maintenance during the Operational Life of the Mitigation Bank**

General maintenance will be performed throughout the year to address conditions that may limit the success of the mitigation bank area and attainment of performance standards and objectives. HB is responsible for all site maintenance activities throughout the operational life of the SBMB. Maintenance activities will include, but are not limited to, vegetative maintenance (including replanting, repair of any areas subject to erosion, weed control around plantings, mowing, control of invasive species, control and discouragement of voles, beaver and deer foraging on plants) and general maintenance (including fence repair, road and trail maintenance as necessary, clean-out of culverts, monitoring of the water control structures, and clean-up of trash).

#### **6.4 Stream Channel and Pearson Eddy Flood Gates**

The primary drainage ditch that leads straight north into Pearson Eddy and transports surface water through the bank site will be replaced by a naturally meandering stream channel. The new channel will be constructed, planted, and left to stabilize for a year before water is redirected into it from the existing ditch system. Once water is diverted to the new stream channel the old ditch will be re-contoured per the grading plan.

Log weirs will be installed in the stream channel to control water levels, assure fish passage and promote channel stability as it moves through the bank site to Pearson Eddy. The main stream will pass over 6 log weirs, five of these will be installed just as the stream drops into the ditch connecting with Pearson Eddy. The logs will act as beaver dams once did to protect the channel bottom from downcutting into the excavated ditch. The log weirs will be adjustable and are planned to hold water on the site at an elevation of 26 feet +/- 1 foot depending upon adaptive management practices to encourage the target vegetative cover types.

The flood gates and dike at Pearson Eddy are planned for removal as part of a restoration project sponsored by the Cascade Land Conservancy with Ducks Unlimited and the NRCS. Combined, these groups have purchased 242 acres to the north including Pearson Eddy and almost a mile of Snoqualmie River shoreline. The continued presence of flood gates in the near term will help protect the bank site from flooding while the planting and stream channel restoration work stabilize. While wetland hydrology will be restored to the bank site without removal of the flood gates, fish refuge and rearing habitat restoration and a more natural hydrologic connection to the Snoqualmie River will require removal of the flood gates.

#### **6.5 Objectives and Performance Standards**

HB expects that development of the SBMB will result in substantial gains in aquatic ecosystem functions over those that are present now or would likely be present on the site if the SBMB were not constructed. Because these functional gains will be used to offset comparable losses to other components of the aquatic environment in the SBMB service area, HB must be able to document that it has successfully brought about those aquatic ecosystem gains before the SBMB credits can be released for sale. HB's success will be measured by the following performance objectives established for the SBMB, each of which is subdivided into specific performance standards.

1. Permanently protect aquatic ecosystem functions at the SBMB by completing the MBI, initiating financial assurance mechanisms, and implementing a conservation easement with permanent funding for site stewardship.

2. Restore and enhance wetland hydrology to 117.3 acres of phases 1 and 2 and 41.7 acres of phase 3 by disabling drain tiles, disabling the drainage ditch system, de-leveling the site and restoring a more natural hydrologic connect to Pearson Eddy to promote wetland hydrology.
3. Restore natural riverine wetland function to the SBMB by replacing 6,400 linear feet of ditched, straightened stream channel with 9,900 linear feet of meandering stream channel across the site and constructing a fish passable transition (weir) from the restored stream channel into Pearson Eddy.
4. Restore native stream and wetland vegetation communities appropriate for the site.
5. Control invasive species to allow native vegetation communities to establish and dominate the bank site.
6. Enhance wildlife habitat by installing perch poles, cavity trees, large woody debris and brush piles in the wetlands, uplands and riparian area.

### Performance Standards

The performance standards below provide a gauge for measuring the success of the ecological restoration and enhancement efforts at the SBMB. Each phase will be independently evaluated for attainment of these objectives and performance standards.

Unless otherwise noted, all documentation required for showing attainment of performance standards (right column of tables below) will be submitted to the MBRT for review and approval as a condition of credit release. Documentation can typically be included in required monitoring reports.

Objective 1: Permanently protect aquatic ecosystem functions at the SBMB by completing the MBI, initiating financial assurance mechanisms, and implementing a conservation easement with permanent funding for site stewardship.

Performance Standard	Documentation
1A. Complete the development of an appropriate Mitigation Banking Instrument and Memorandum of Agreement. This standard must be met before any other SBMB credits can be released.	Mitigation Banking Instrument and Memorandum of Agreement have been signed by the necessary regulatory agencies.
1B. Protect ecosystem function by placing an MBRT approved conservation easement on the property. For each phase of the SBMB, this performance standard must be met before the credits associated with Objectives 2 through 6 can be released.	Provide the MBRT a copy of the signed MBRT approved conservation easement and evidence that it has been recorded with Snohomish County and placed on the property title.



1C. Conservation and habitat restoration easements will be placed on areas identified in the MBI as off-site buffers. For each phase of the SBMB, this performance standard must be met before the credits associated with Objectives 2 through 6 can be released.	Provide the MBRT with a copy of the conservation easement and evidence that it has been recorded with Snohomish County and placed on the property title.
1D. Provide financial assurance for each phase by establishing an Irrevocable Letter of Credit pursuant to the requirements established in Article III.D.1. of the MOA. For each phase of the SBMB, this performance standard must be met before the credits associated with Objectives 2 through 6 can be released.	Demonstrate to the MBRT that a compliant and acceptable Irrevocable Letter of Credit has been established to provide financial assurance for each phase.
1E. Establish a Long-Term Management and Maintenance Endowment Fund escrow account pursuant to the requirements established in Article III.D.2. of the MOA. This performance standard must be met before the credits associated with Objectives 2 through 6 can be released, regardless of phase.	Demonstrate to the MBRT that a Long-Term Management and Maintenance Fund has been initiated through establishment of a compliant and acceptable escrow account.

Objective 2: Restore and enhance wetland hydrology to 117.3 acres of phase 1 and 2 and 41.7 acres of phase 3 by disabling drain tiles, disabling the drainage ditch system, de-leveling the site and restoring a more natural hydrologic connect to Pearson Eddy to promote wetland hydrology.

Performance Standard	Documentation
2A. Disable drain tiles, disable drainage ditches, de-level the site and re-contour it to promote wetland hydrology.	Documentation including photographs of the destruction of drain tiles, plugged ditches and as built drawings with key water control feature elevations will be provided to the MBRT.
2B. Wetland hydrology has been restored to effectively drained wetlands as a result of disabling the drain tile system.	During years 3, 5, and 7, use data collected from permanent monitoring wells to demonstrate that wetland hydrology has been restored in areas where the drain tile system was disabled.
2C. In years 2 and 5 permanently ponded areas comprise less than 14 acres of phase 1 and 2, and 2 acres of phase 3.	Measure permanently ponded areas and document with photographs during August or September of years 2, and 5.

2D. Improve the hydrologic connection to Pearson Eddy by either removing the flood gates or upgrading them with a fish passable structure.	Document that this work was completed with photographs and as-built drawings.
2E. In years 7 and 10 a wetland delineation will verify that at least 105 acres of phases 1 and 2 and 37 acres of phase 3 are wetlands.	Wetland delineations conducted in years 7 and 10, in accordance with the 1987 Corps of Engineers Wetland Delineation Manual and Washington State Wetland Delineation Manual

Objective 3: Restore natural riverine wetland function to the SBMB by replacing 6,400 linear feet of ditched, straightened stream channel with 9,900 linear feet of meandering stream channel across the site and constructing a fish passable transition (weir) from the restored stream channel into Pearson Eddy.

Performance Standard	Documentation
3A. The meandering stream channels and other water control features are constructed according to the approved plans, and any changes from initial plans are approved by the MBRT.	As built drawings including final site grades (topography), stream channels, berms, weir locations and specifications, and any changes from approved plans will be provided to the MBRT. Photo document water levels in the stream channel in year 1, as the system and plantings stabilize and then as stream flow is diverted to the restored channel in year 2.
3B. Stream flow at high levels pass properly over the weir system and the through the meandering stream channels and do not cause excessive erosion at any point in the restored system.	Monitor flow of the stream through the restored channel and weir system at different flow rates. Document flows, any erosion problem encountered, and any remedial action taken in monitoring reports for years 3, 5 and 7.
3C. In years 3 and 10, the stream channels and weir structures are consistent with WDFW requirements for fish passage.	Provide to the MBRT WDFW verification that the constructed channel and structures satisfy WDFW requirements for fish passage.

Objective 4: Restore native stream and wetland vegetation communities appropriate for the site.

Performance Standard	Documentation
4A. Site planted according to approved planting plan.	As-built plans and photographs documenting that the site has been planted in accordance with the approved planting plan. Documentation will include planting dates, plant quantities, species diversity, and locations of each plant community.
4B. At years 3, 5 and 7 forested wetlands will have a minimum density of 350 living native trees at least one meter in height per acre. Four (three in phase 1) native tree species shall each comprise at least 10% of the trees in these areas, or number at least 35 per acre.	Permanent transects, 100-feet long and 20-feet wide will be established during the baseline assessment within each plant community in the mitigation areas. During monitoring events, trees, shrubs, and herbaceous vegetation will be evaluated within each of these sampling locations.
4C. At years 3, 5 and 7 scrub-shrub and upland areas will have a minimum density of 350 living native trees at least one meter in height and/or shrubs per acre. Five (four in phase 1) native woody species shall each comprise at least 10% of the number of trees and shrubs in these areas.	The establishment of shrubs and trees will be evaluated in a 20-foot-wide belt along the established transect. The species and location of shrubs and trees within this belt will be recorded, and will be evaluated during each monitoring event to determine percent survival. Percent survival and percent of total will be determined based upon the original planting and will not include volunteers. Herbaceous species occurring along the transect will be recorded.
4D. At years 3, 5 and 7 marsh, wet meadow, and aquatic bed areas will have a total of at least 10 native facultative and wetter species.	Documentation of satisfaction of the planting performance standards will include reports of surveys of species, species quantities (by numbers or area coverage, as appropriate), and plant locations.
4E. At years 3, 5 and 7 marsh and wet meadow areas will have at least 70% areal cover of native facultative and wetter species. No single species will make up more than 30% of the total areal cover.	Other practicable and effective vegetation measurement methods may be used if approved by the Signatories.
4F. At years 3, 5 and 7 forested and scrub-shrub portions of the buffer areas will have a minimum of 350 living native trees at least one meter in height or shrubs per acre. Four native species shall each comprise at least 10% of the trees or shrubs in these areas.	
4G. At year 10 there will be a minimum of 250 living native trees at least one meter in height per acre in forested wetland areas and 250 living	

native shrubs or trees per acre in scrub-shrub wetland areas.	
4H. At year 10 there will be at least 8 native facultative and wetter species in marsh, wet meadow, and aquatic bed areas.	
4I. At year 10 emergent wetlands will have at least 90% areal cover of native facultative and wetter species. No single species will make up more than 30% of the total areal cover.	

Objective 5: Control invasive species to allow native vegetation communities to establish and dominate the bank site.

Performance Standard	Documentation
5A. In years 3 and 5, the cover of invasive species in each phase of the SBMB will be no more than 50% of the baseline cover, and the year 5 cover of invasive species will be lower than the year 3 cover. For purposes of performance standards 5A and 5C, invasive species are Himalayan blackberry, purple loosestrife, reed canary grass, scotch broom, tansy ragwort, English ivy, Japanese knotweed, Himalayan knotweed, giant knotweed and hybrid knotweed.	<p>Baseline mapping of the cover of these invasive species over the bank site will be conducted during June – August of the first full growing season following initial construction (typically year 1 or 2). The size and location of each patch/colony of invasive species larger than 30 square feet will be mapped.</p> <p>The areal extent of invasive species will be remapped during June-August of years 3 and 5 and reported to the MBRT. The reports will document changes in the cover of invasive species relative to baseline conditions and describe the status and results of invasive species management activities.</p>
5B. No living specimens of Japanese, Himalayan, giant, or hybrid knotweed; purple loosestrife; or English ivy will be allowed to survive on the SBMB site.	Document the methods and results of surveys of the entire SBMB site, conducted during years 2, 5, and 10.
5C. In year 10 invasive species, as a group, do not dominate more than 20% of the bank site.	A report on the results of a statistically valid survey of the vegetative cover of the bank site. At each survey site (e.g., transect), the aerial covers of all invasive species present shall be combined into a single “invasive species” group. This species group will be considered dominant if its aerial cover is greater than any other species and exceeds 30% of that survey site.

Objective 6: Enhance wildlife habitat by installing perch poles, cavity trees, large woody debris and brush piles in the wetlands, uplands and riparian area.

Performance Standard	Monitoring Method
6A. One perch pole and one cavity tree will each be provided per every 5 acres of upland; 80% of perch poles and cavity trees will each be present in year 10.	Provide as-built drawings and demonstrate success with an MBRT tour of the site after construction. Document location and use of the habitat features in monitoring reports.
6B. One root wad will be provided for every 250 feet of stream channel.	

In the event that a specific performance standard is not being fully met but the MBRT believes that satisfactory progress has been made towards meeting this standard, the MBRT may, at its discretion, release some or all of the credits associated with that performance standard, as detailed in **Tables 5a, 5b, and 5c**.

## 6.6 Multiple Use Plan and Other Activities

Recreational, educational, and scientific activities that do not conflict with the stated purpose and goals of the SBMB or adversely affect the ecological functioning of the SBMB may occur on SBMB property. Cattle and horse grazing may continue temporarily on portions of the site to maintain control of grasses and invasive species until that section is restored per the site development plan.

The Mount Vernon Research and Extension Unit of the Washington State University has been given access to approximately two acres of Phase 3 for research on various methods of restoring native vegetation in areas dominated by reed canary grass. Dr. Timothy Miller will be overseeing these tests for a period of approximately five years. This testing program will provide useful data both for the SBMB and for others doing similar restoration and enhancement work in the Northwest. Eventually this area is intended to be a portion of the Phase 3 buffer that will be shrub scrub or forested upland.

The site may be used by the owner and guests for walking, bird watching, horseback riding and other passive recreation including hunting and fishing as long as it is not done on a commercial basis and does not conflict with the stated purpose and goals of the bank, or adversely affect the ecological viability of the SBMB. No structures can be constructed on a portion of the bank protected by the SBMB conservation easement or other protective covenants.

## 7.0 CREDIT/DEBIT DETERMINATION

### 7.1 Credit Generation

HB will generate SBMB credits by restoring 197 acres of effectively drained wetlands and other uplands, enhancing 28 acres of degraded farmed wetlands, and constructing approximately 9,000 linear feet of stream channel to replace 6,400 feet of existing ditched stream (**Table 1B**).

For purposes of the SBMB, a credit is defined as the increase in aquatic ecosystem functioning that would result from re-establishment, rehabilitation, enhancement or establishment on the SBMB that is equivalent to the aquatic ecosystem functioning of one acre of intact Category II wetland in Western Washington. A credit represents the functions and area of a Category II wetland system including forested, scrub shrub and emergent floodplain wetlands.

The wetlands at the bank site are riverine flow-through systems which provide water quality, hydrologic and habitat functions. Wildlife supported include fish, herptiles, mammals, waterfowl, birds of prey and other bird species. The bank provides flow attenuation and reduction of downstream erosion for the Snoqualmie, Skykomish and Snohomish Rivers.

While the actual number of credits generated by the SBMB cannot be determined until the project is constructed and the success of re-establishment, rehabilitation, and enhancement activities is assessed by the MBRT, the number is expected to be 163.1 credits, as shown in **Table 4**. The final number of credits will be determined by the MBRT and based upon the achievement of performance standards.

**Table 4. Wetland Credit Generation by Bank Development Activity and Construction Phase.**

Credit calculation is based on the aquatic ecosystem functions performed by a typical category II wetland in Western Washington. Wetland re-establishment and rehabilitation credits plus floodplain upland buffers credits will be combined into a single “Wetland/Stream” credit type. This table does not include 22.6 non-credit acres on the 225 acre SBMB and 2.3 acres adjoining the SBMB that are designated as permanent perimeter buffer.

Process	Present Acreage			Conversion Rate	Wetland Credits		
	Phase 1	Phase 2	Phase 3		Phase 1	Phase 2	Phase 3
Wetland Re-establishment	15.2	78.9	37.1	1 : 1	15.2	78.9	37.1
Wetland Rehabilitation	4.4	18.8	4.6	1.2 : 1	3.7	15.7	3.8
Floodplain Upland Buffer	15.3	12.0	16.1	5 : 1	3.1	2.4	3.2
Total Credits					22.0	97.0	44.1

Perimeter buffer and floodplain upland buffer acreage may be utilized for buffer mitigation in conjunction with local government regulations. HB will report sales of floodplain upland buffer credits to the MBRT at which point these acres would not be eligible for conversion to wetland credits.

There is an opportunity to develop rearing and holding habitat for Federally-listed and other priority fish species within the SBMB area. These improvements would provide substantial gains in fishery habitat quality that could compensate for adverse impacts of permitted projects. HB will coordinate with the MBRT, Tribes, WDF&W, USF&WS, and NOAA Fisheries to determine potential future credit for this habitat improvement. HB may work with the appropriate agencies to improve habitat for other Federally-listed or other priority species within the SBMB. Nothing in this MBI shall prevent HB from receiving additional credit for this work provided it does not conflict with the provisions of this MBI.

Potential credits resulting from activities performed as part of this project for storm water retention, carbon sequestration, pollution or nutrient reduction are retained by Habitat Bank and may be sold separately at some point in the future with no effect on the value or number of credits established by this MBI, provided the generation of such credits does not produce a conflict with the provisions of this MBI. It is the prerogative of each regulatory agency to determine which type of credit may be used for compensation and in what combination. HB will notify the MBRT if any new credits are established.

Nothing in this MBI shall prevent HB from working with the MBRT or authorized regulatory agency to develop new credits or exchange existing SBMB credits for other types of endangered species or habitat credit defined in future years by regulatory authorities, provided this action does not conflict with the provisions of this MBI.

## **7.2 Credit Release Schedule**

SBMB credits will be released by the MBRT for sale as the performance standards associated with those credits are met, with the following exceptions: (1) no credits may be released prior to meeting performance standards 1A, which require the banker to complete the development of an MBI and MOA for this bank, and (2) no credits associated with the Year 10 performance standards (the credits in the Year 10 column of Tables 5a., 5b., and 5c.) for a particular phase may be released until at least 60% of the credits associated with Years 0 through 7 for that phase have been released. The MBRT may award partial credit for partial accomplishment of a performance standard. Once a credit is released, HB may sell or transfer that credit at any time, subject to the provisions of this MBI.

For each phase of the SBMB, the MBRT will normally approve the release of credits according to the schedule in Table 5a, 5b or 5c, below, provided HB demonstrates success in meeting the subject performance standards and is in compliance with the provisions of this MBI. To request the release of credits associated with a particular performance standard HB will provide the MBRT clear documentation of success, usually as an element of a scheduled monitoring report. The MBRT will expeditiously review the submitted documentation of success. If the MBRT determines that HB has successfully met a performance standard and is otherwise in compliance with the terms and conditions of the MBI, the MBRT will release for sale or transfer the SBMB credits associated with that performance standard pursuant to Table 5a, 5b, or 5c.

If HB is not able to meet a particular performance standard by the year indicated in 5a, 5b, or 5c, it may submit documentation of successful satisfaction of those performance standards during a subsequent year, and the appropriate credits will be released for sale or transfer without penalty.

If the institution of an adaptive management or remedial action plan as described in Section 12.2 causes delay in the achievement of a performance standard, the timeline for achievement of each subsequent milestone for that performance standard will be deferred for a like interval, unless otherwise specifically approved. If the Bank is determined to be operating without prior written approval at a deficit at any time, award and debiting of credits will immediately cease. The MBRT, in consultation with HB, will determine what remedial actions are necessary to correct the situation and direct their performance prior to the release of any additional mitigation credits.

Phases 1 and 2 will enter into the credit generation process concurrently. The initial conservation easement will be placed over both phases shortly after the MBI is signed. However, Phases 1 and 2 will be treated independently in terms of credit release since Phase 1 is two years ahead of Phase 2 in construction timing. The conservation easement for Phase 3 will be put in place once demand warrants

construction. In addition, the release of credits tied to performance standards 3B and 3C for Phase 1 will require that these same performance standards be simultaneously met for Phase 2.

**Table 5a. Credit Release Schedule for Phase 1 of the SBMB.** The number of credits released is anticipated to total 22.0 credits, as shown in Table 4.

Performance Standard	Number of Credits Released						
	Year <sup>1</sup>						
	0	1	2	3	5	7	10 <sup>2</sup>
1A	0.66						
1B, 1C	0.88						
1D	0.66						
1E	0.88						
2A			2.20				
2B				0.44	0.44	0.22	
2C			0.88		0.66		
2D						0.66	
2E						0.44	0.44
3A			0.88				
3B				0.22	.88	.44	
3C				0.44			0.22
4A			1.32				
4B				0.22	0.22	0.22	
4C				0.22	0.22	0.22	
4D				0.22	0.22	0.22	
4E				0.22	0.22	0.22	
4F				0.22	0.22	0.22	
4G							0.44
4H							0.22
4I							0.44
5A				0.44	0.66		
5B			0.44		0.22		0.22
5C							0.22
6A			0.88				0.22
6B			0.44				
Total	3.08	0.0	7.04	2.64	3.96	2.86	2.42

<sup>1</sup> Year 0 is the calendar year during which the MBI is signed and a conservation easement implemented for that phase. Year 2 is normally the calendar year following the year during which construction was completed and the year during which as-built drawings are submitted.

<sup>2</sup> No credits associated with the Year 10 performance standards for a particular phase may be released until at least 60% of the credits associated with Years 0 through 7 for that phase have been released.



**Table 5b. Credit Release Schedule for Phase 2 of the SBMB.** The number of credits released is anticipated to total 97.0 credits, as shown in Table 4.

Performance Standard	Number of Credits Released						
	Year <sup>1</sup>						
	0	1	2	3	5	7	10 <sup>2</sup>
1A	2.91						
1B, 1C	3.88						
1D	2.91						
1E	3.88						
2A			9.70				
2B				1.94	1.94	0.97	
2C			3.88		2.91		
2D						2.91	
2E						1.94	1.94
3A			3.88				
3B				0.97	3.88	1.94	
3C				1.94			0.97
4A			5.82				
4B				0.97	0.97	0.97	
4C				0.97	0.97	0.97	
4D				0.97	0.97	0.97	
4E				0.97	0.97	0.97	
4F				0.97	0.97	0.97	
4G							1.94
4H							0.97
4I							1.94
5A				1.94	2.91		
5B			1.94		0.97		0.97
5C							0.97
6A			3.88				0.97
6B			1.94				
Total	13.58	0.0	31.04	11.64	17.46	12.61	10.67

<sup>1</sup> Year 0 is the calendar year during which the MBI is signed and a conservation easement implemented for that phase. Year 2 is normally the calendar year following the year during which construction was completed and the year during which as-built drawings are submitted.

<sup>2</sup> No credits associated with the Year 10 performance standards for a particular phase may be released until at least 60% of the credits associated with Years 0 through 7 for that phase have been released.

**Table 5c. Credit Release Schedule for Phase 3 of the SBMB.** The number of credits released is anticipated to total 44.1 credits, as shown in Table 4.

Performance Standard	Number of Credits Released <sup>1</sup>						
	Year <sup>2</sup>						
	0	1	2	3	5	7	10 <sup>3</sup>
1A	1.32						
1B, 1C	1.77						
1D	1.32						
1E	1.77						
2A			4.42				
2B				0.88	0.88	0.44	
2C			1.77		1.32		
2D						1.32	
2E						0.88	0.88
3A			1.77				
3B				0.44	1.77	0.88	
3C				0.88			0.44
4A			2.66				
4B				0.44	0.44	0.44	
4C				0.44	0.44	0.44	
4D				0.44	0.44	0.44	
4E				0.44	0.44	0.44	
4F				0.44	0.44	0.44	
4G							0.88
4H							0.44
4I							0.88
5A				0.88	1.32		
5B			0.88		0.44		0.44
5C							0.44
6A			1.77				0.44
6B			0.88				
Total	6.18	0.0	14.15	5.28	7.93	5.72	4.84

<sup>1</sup> The eight credit release values in this table  $\geq 1.77$  were each rounded up an extra 0.01 so the sum of the credits in this table equals 44.1 exactly.

<sup>2</sup> Year 0 is the calendar year during which the MBI is signed and a conservation easement implemented for that phase. Year 2 is normally the calendar year following the year during which construction was completed and the year during which as-built drawings are submitted.

<sup>3</sup> No credits associated with the Year 10 performance standards for a particular phase may be released until at least 60% of the credits associated with Years 0 through 7 for that phase have been released.

### 7.3 CREDIT RATIOS

SBMB credits may be used, subject to the approval of the regulatory agencies with jurisdiction over projects that desire to utilize the SBMB, to compensate for authorized permanent or temporary impacts, as well as to resolve enforcement or permit compliance actions, such as replacing previously implemented project-specific mitigation that has partially or completely failed. This section establishes for potential bank customers and regulatory agencies guidance on the approximate number of SBMB credits typically required to compensate for the permanent loss of certain aquatic resource types and functional levels (**Table 6**). The actual number of SBMB credits required to compensate for an adverse impact to aquatic resources in any particular situation depends on many factors (e.g., whether the impact is permanent or temporary) and will be determined on a case by case basis by the regulatory authority(ies) authorizing the impact.

**Table 6. The number of SBMB credits normally required to compensate for a permanent loss of a listed aquatic resource.** (Wetland impacts are measured in acres.) Wetland functional categories are based on the “Washington State Wetland Rating System for Western Washington, as revised 2004.” Due to the variety and typically high level of functioning of both streams and Category 1 wetlands, compensation for impacts to these resources by SBMB credits will be determined by the regulatory agencies on a case by case basis.

Resource Impact	SBMB Credits per Unit of Impact
Wetland, Category I	Case by case
Wetland, Category II	1.2
Wetland, Category III	1.0
Wetland, Category IV	.85
Critical Area Buffer	Case by case
Stream	Case by case

HB may work with King or Snohomish County to use SBMB credits for county-sponsored in-lieu fee programs or may work on pilot programs to allow counties to purchase buffer credits and then sell them in small units for impacts to critical area buffers in residential lot developments or for agricultural drainage maintenance impact programs.

### 8.0 PROCEDURES FOR USING THE MITIGATION BANK

An applicant for a Department of the Army, State of Washington, King County, or Snohomish County permit for a project with adverse impacts to the aquatic environment must generally obtain the approval of each involved regulatory agency in order to use the SBMB as a source of compensatory mitigation. To receive approval to use the SBMB, the applicant must demonstrate to the satisfaction of the regulatory agencies with jurisdiction over that project that the project complies with all applicable requirements pertaining to alternatives and mitigation sequencing and that purchasing credits from the SBMB for compensatory mitigation would be in the best interest of the environment. Specifically, a permit applicant must generally be able to demonstrate to the regulatory agencies that:

- A. There is no practicable alternative to adversely impacting the water body, critical area, buffer or other regulated area,
- B. All appropriate and practicable measures to minimize adverse impacts to the aquatic ecosystem have been considered and included in the project, and
- C. All appropriate and practical on-site compensatory mitigation for unavoidable adverse impacts is included in the project.

Local jurisdictions may establish policies where the best management practices for small impacts to low value, isolated wetlands are for the permittee to go directly to the SBMB for credits. Upon receiving permission to utilize credits from the SBMB the permittee must contact HB to ensure that credits are available. Upon completion of the transaction, HB will inform the permitting regulatory agency of each completed transaction, via email with an attached copy of the accounting ledger per Section 10.0.

## **9.0 SERVICE AREA**

The primary service area for SBMB includes WRIA 7 below the 2,500-foot elevation contour (**Figure 10**) downstream to where the Snohomish River starts to mix with the salt water of Puget Sound and becomes estuarine. This line is identified by the “Snohomish Estuary Wetland Integration Plan” – a point approximately two miles north of the point where Highway 2 crosses the Snohomish River in Everett. In the Skykomish River Basin the service area extends up to the City of Index. The service area includes the non-estuarine portions of tributaries to the Snohomish River that enter the river below Highway 2. The SBMB may be used to compensate for permitted impacts in adjacent portions of WRIA 8 (Sammamish River watershed) or other nearby areas within King and Snohomish Counties if specifically approved by the appropriate regulatory agencies and the Signatories, and such mitigation would be practicable and environmentally preferable to other mitigation alternatives.

## **10.0 ACCOUNTING PROCEDURES**

- A. HB shall establish and maintain for inspection and reporting purposes a ledger of all credit transactions. The following information will be recorded in the ledger for each transaction:
  - 1. Date of transaction
  - 2. Number of credits transacted
  - 3. For credits released for sale or transfer, reference the performance standard(s) and Bank phase to which the released credits correspond.
  - 4. For credit sales/transfers, include the name, address, and telephone number of purchaser; permit or project number(s) and name of regulatory agency(s) requiring permits; location of the project for which the credits are being purchased; and a brief description of the adverse project impacts requiring compensatory mitigation (e.g., nature, size, and quality of aquatic resource affected, functions and values of wetlands and buffers)
  - 5. For credits withdrawn from the ledger for reasons other than credit purchase, include the specific reason for the withdrawal.
  - 6. Number of credits available in the SBMB at the time of transaction
  - 7. Bank balance after this transaction

- B. HB shall provide the MBRT with a copy of each bank transaction within 30 days of the transaction.
- C. HB shall provide the MBRT a copy of the bank ledger, as of December 31<sup>st</sup> of the previous year, by January 31 of each year until all credits have been awarded and sold or otherwise transferred, or until HB has informed the MBRT in writing that it has terminated banking activity.

## **11.0 LONG-TERM PROTECTION AND MANAGEMENT**

### **11.1 Protective Covenant**

HB shall dedicate in perpetuity, by an appropriate conservation easement, the property involved in each phase of the SBMB that is to be restored or enhanced for credit. In order to satisfy Performance Standard 1.B., this conservation easement must be approved by the MBRT. This easement will be recorded with Snohomish County. The conservation easement shall not be removed or modified without written approval of the MBRT. Conveyance of any interest in the property shall be subject to this conservation easement. Use prohibitions reflected in the easement preclude the site from being used for activities that would be incompatible with the intent of the easement. All restrictions shall be granted in perpetuity without encumbrances or other reservations, except those encumbrances or reservations (e.g., retention of recreation and privileges by the landowners) approved by the MBRT as not adversely affecting the ecological viability of the SBMB. Any area not encumbered by the conservation easement will not be credited for use in the SBMB.

The conservation easement shall reflect, as one of the rights afforded the grantee, that the site owner warrants that it will comply with all such applicable state and local requirements for controlling noxious weeds on the SBMB site. Furthermore, this conservation easement shall provide that all structures, facilities, and improvements within the SBMB, including roads, trails, and fences, that are merely incidental to the functionality of the mitigation site but necessary to the SBMB's management and maintenance activities, shall be maintained by the site owner for as long as is necessary to serve the needs of long-term management and maintenance. All structures, facilities, and improvements that directly and substantially contribute to the functionality of the mitigation site, including the log weir system at the northwest corner of the site leading into Pearson Eddy, will be included within the responsibilities delineated in the Long-Term Management and Maintenance Plan. If the log weir structure is eventually replaced by a more naturalized structure resulting from nearby trees maturing and beavers becoming established on the site, this structure will no longer need to be actively maintained provided the naturalized structure provides a level of fish passage, erosion protection, and site hydrology that is similar to the original structure and acceptable to the MBRT.

### **11.2 Force Majeure**

The mitigation bank is vulnerable to acts of nature such as wildfires, climatic instability, depredation (beavers and deer), disease, and/or adverse flooding and/or fluviogeomorphic change and/or gross vandalism such as arson, that are beyond the control of HB to prevent or mitigate. The occurrence of any such act may necessitate changes to the SBMB, including revision of the MBI, performance goals or other management plans, to allow for activities that would offset and/or counteract the negative environmental impacts of that act. Depending upon the circumstances, it may be appropriate to let nature take its course, particularly when acceptable environmental conditions would be expected to eventually reestablish. If any such act occurs the MBRT, in consultation with HB, shall determine what changes to the SBMB and/or this MBI will be in the best interest of the SBMB and the aquatic environment. Any

change to the SBMB necessitated by an act of nature or gross vandalism, beyond the control of HB shall be specified in an appropriate document and require the approval of the MBRT.

Acts of nature or gross vandalism addressed in this section shall not affect the status of previously released credits, whether or not they have yet been sold or transferred.

### **11.3 Long-Term Management and Maintenance**

HB is responsible for ensuring that a Long-Term Management and Maintenance Plan is developed and implemented to protect and maintain in perpetuity the wetland functions and values of the SBMB site. This plan must be approved by the MBRT prior to termination of the operational life of the Bank. Once the operational life of the Bank has terminated pursuant to Article V.F. of the MOA, HB shall assume responsibility for implementing that Plan, as provided in Article V.G. of the MOA. HB may assign this responsibility through a long-term management and maintenance assignment agreement to a third party assignee, pursuant to the provisions of Article V.G. of the MOA. At the same time this assignment agreement is executed, the MBRT will disburse the contents of the Long-Term Management and Maintenance Endowment Fund, pursuant to Article III.D.2.c.(vii) of the MOA. Subsequent deposits to the Long-Term Management and Maintenance Endowment Fund will be disbursed to the Third Party Designee under Article III.D.2.b. of the MOA, as necessary to support the long-term management and maintenance activities of the assignee, or upon termination of the Endowment Fund escrow account pursuant to Article III.D.2.c.(viii) of the MOA. Upon execution of the long-term management and maintenance assignment agreement and transfer of the Long-Term Management and Maintenance Endowment Fund, HB shall be relieved of all further long-term management and maintenance responsibilities under this MBI and the MOA.

The Long-Term Management and Maintenance Plan that directs HB's activities during the interim transition period prior to assignment of long-term management and maintenance responsibilities, and directs the activities of the assignee thereafter, shall adhere to the following guidelines and objectives:

- A. The stepped weir constructed at the northwest corner of the bank site will be monitored to insure that it remains fish-passable and does not cause erosion or adversely affect the intended hydrology of the mitigation bank. All maintenance and repair necessary to meet these requirements shall be included in the long-term monitoring and maintenance plan.
- B. Periodically patrol the SBMB site for signs of trespass and vandalism. Maintenance will include reasonable actions to deter trespass and repair vandalized areas.
- C. Monitor the condition of such structural elements of the bank site as signage, fencing, roads, and culverts. The long-term management and maintenance plan will include provisions to maintain and repair these structures as necessary to achieve the goals of the mitigation bank and comply with the provisions of the conservation easement. Structures that are no longer needed to facilitate or protect the ecological functioning of the bank site may be removed or abandoned if consistent with the terms and conditions of the conservation easement.
- D. Inspect the SBMB site at least annually to locate any recurrence of English ivy and the invasive knotweed species listed under performance standard 5A. Any plant of these species discovered on the SBMB site must be eradicated. The MBRT anticipates that this long-term control will involve identifying and eradicating a relatively small number of recurrences each year. In the event that the Snoqualmie River watershed becomes so infested with these species in the future that their effective control on the SBMB site is either no longer practicable or unreasonably expensive, the MBRT will

consider appropriate changes to the Long-Term Management and Maintenance Plan. The level of control for the species addressed in this paragraph may exceed the level of control imposed independently by state and local authorities.

To gain MBRT approval, the Long-Term Management and Maintenance Plan shall consist of enumerated performance standards that will demonstrate achievement of each guideline or objective. During the transition interim period, HB shall document that it is achieving these performance standards, pursuant to Article V.G. of the MOA, by submitting status reports to the MBRT annually or on a schedule approved by the MBRT. Monitoring and reporting requirements following the interim transition period will be conducted and submitted as specified in the Long-Term Management and Maintenance Plan.

A primary goal of the SBMB is to create a self-sustaining natural wetland system that achieves the intended level of aquatic ecosystem functionality with minimal human intervention, including long-term site maintenance. As such, natural changes to the vegetative community, other than changes caused by noxious weeds, that occur after all SBMB performance standards have been met are not expected to require remediation.

HB, as the owner of the SBMB site, will retain responsibility for controlling noxious weeds pursuant to all applicable state and local requirements in force at that time. These obligations are imposed on the owner of the SBMB site independently of this MBI, and are not subject to oversight and verification by the MBRT. Noxious weed control measures may include mechanical vegetation control, herbicide treatments, temporary plantings, and water regime control.

## **12.0 MONITORING, REPORTING, AND REMEDIAL ACTIONS**

HB shall monitor and report on the progress of the SBMB toward achieving the goals, objectives, and performance standards established by this MBI and take all actions directed by the MBRT to remediate any problem that prevents a component of the SBMB from achieving the goals, objectives, and performance standards of the SBMB. Procedures for as-built reports, monitoring reports and remedial actions are described below.

- A. As-built reports will be submitted to the MBRT for each phase of construction, upon final grading and planting to verify topography, hydrology, construction and planting. The report will include site topography, descriptions of planting, wetland boundary, water control structures, designated photo points, ground water monitoring wells, staff gauges, and other pertinent data.
- B. HB will prepare and submit to the MBRT annual monitoring reports that document the condition of the SBMB and its progress toward achieving the goals, objectives, and performance standards (**Tables 5a, 5b, and 5c**). Monitoring reports for each calendar year will be submitted by February 1<sup>st</sup> of the following year.
- C. Throughout the first winter and spring following each phase of construction of the SBMB, HB will carefully monitor hydrology and the functioning of relocated streams and drainages. HB will also conduct an initial vegetation survival survey for each phase during the spring following planting to document planting success and to quickly respond to any problems. Results of these surveys will be included in the monitoring reports.

**Table 7. Schedule of Reporting Activities for Each Phase of Construction.**

	TIME SINCE COMPLETION OF BANK ACTIVITIES (YEARS)							
	0	1	2	3	4	5	7	10
As Built Report		AB						
Monitoring Reports		MR	MR	MR	MR	MR	MR	MR

## 12.1 Reports

Each monitoring report shall contain the following information:

- A. An overview of the current ecological condition of the SBMB including a survey of the vegetative and wildlife communities, effectiveness of the restoration and enhancement activities accomplished to date, and progress of the SBMB in achieving the specific performance standards of the SBMB. To provide data for evaluating progress towards achievement of performance standards, permanent vegetation transects will be established at selected locations within each phase of the bank. The same performance transects will be re-visited each period, with a record kept of all plant species found. Vegetation data in forested and scrub-shrub areas will include species, cover by species, average stem diameter, and height. Standard MBRT-approved vegetation measures and techniques will be used to demonstrate whether performance standards are being met. Experience in the field may indicate that other performance monitoring methods would provide more useful information; the MBRT must approve in advance any changes in the means of gathering or reporting performance data. All monitoring will be conducted by qualified personnel.
- B. A detailed discussion about the likely cause and impact of any setback or failure that occurred and recommendations for future actions and strategies that might resolve those problems.
- C. Pertinent additional information on such aspects of the SBMB as hydrology, soils, vegetation, fish and wildlife use of the area, recreational and scientific use of the SBMB, and acts of nature, such as disease, wildfire, and flooding that occurred.
- D. Proposals for any contingency or remedial measures.
- E. Photographs of the SBMB taken from permanent locations that are accurately identified on the as-built drawings. The photographs are intended to document the progress of each component of the SBMB, as well as the SBMB in general, toward achieving the goals and performance standards of the SBMB. Such photo-monitoring will include general vantage points around the margin of the SBMB, vantage points within the SBMB, and at specific monitoring locations such as transects and/or sampling points.

## 12.2 Remedial Action during the Operational Life of the Bank

In the event that one or more components of the SBMB do not achieve performance standards or comply with any other requirement of this MBI, the following sequence of remedial actions shall be taken:

- A. If the monitoring reports, or inspection by representatives of the MBRT agencies, indicate persistent failure to achieve and maintain the prescribed performance standards, HB shall



propose adaptive management actions to correct the shortcomings. The MBRT may also unilaterally direct adaptive management actions, following consultation with HB, if the MBRT identifies a need for corrective action and no adaptive management plan acceptable to the MBRT has been submitted within a reasonable period of time. The adaptive management plan shall specify the corrective activities to be conducted, the schedule of completion of those activities, and a monitoring plan for assessing the effectiveness of the adaptive management. The objective of the adaptive management plan shall be to attain the originally prescribed performance standards, unless the MBRT expressly establishes replacement performance standards, following consultation with HB, in light of circumstances and conditions observed at the site. If HB proposes to institute replacement performance standards, HB may not initiate activities designed to achieve those replacement standards until the new performance standards are approved by the MBRT. During the period that a specific component of the SBMB is out of compliance, the MBRT may suspend its approval of the use of that component's SBMB credits as compensatory mitigation for authorized projects.

- B. If remedial actions taken by HB under the provisions of the preceding paragraph do not bring that component of the SBMB into compliance with the requirements of this MBI, including any approved changes to the MBI, HB may:
1. Provide written notice of its intent to discontinue efforts to achieve one or more performance standards for that component of the SBMB. Upon providing such notice, no credits may be established for that component, but at the discretion of the MBRT HB may be released from future maintenance and monitoring obligations for that component provided that releasing HB from those obligations does not adversely affect the remainder of the SBMB. If the MBRT approves such a release from HB's obligations, any previously released credits not yet sold or transferred for that component shall be removed from the SBMB ledger, and any credits already sold or transferred for that component shall be replaced with unsold credits. If there are insufficient unsold or untransferred credits to replace those removed credits, HB shall implement other appropriate compensatory mitigation approved by the MBRT.
  2. If the failure of one or more components of the SBMB to comply with the requirements of this MBI adversely affects the ability of the SBMB to achieve its goals and objectives or HB does not make a reasonable effort to bring the SBMB into compliance with the MBI, the MBRT, after notifying HB, may terminate this MBI and operation of the SBMB. HB shall implement all appropriate compensatory mitigation that the MBRT determines is necessary to compensate for those authorized impacts to the aquatic environment that have not been successfully compensated for by the SBMB pursuant to the requirements of the MBI.
- C. The MBRT may, alternatively, implement remedial action on its own initiative, acting through a Third Party Designee, by accessing the Letter of Credit funds account established pursuant to Section 13.0A. of this Instrument and Article III.D.1. of the MOA.

### **13.0 FINANCIAL ASSURANCES**

- A. HB shall furnish a Letter of Credit to provide financial assurance underlying the establishment and functionality of each phase of the Bank, as provided in Article III.D.1 of the MOA. A

separate Letter of Credit may be furnished for each phase of Bank establishment. The MBRT may direct disbursement from each credit funds account established through an Irrevocable Letter of Credit upon abandonment of Bank establishment efforts directed at a particular phase, or any failure stemming from any cause to achieve any of the Bank Objectives or Performance Standards reflected in Section 6.5 of the Instrument in regard to a particular phase, including but not limited to deficient design, ineffective establishment, deterioration of functionality or performance after establishment, financial limitations of the Sponsor, or force majeure. The MBRT may access the funds guaranteed by each Letter of Credit to accomplish any of the following objectives or features of the Bank: construction, establishment, monitoring, or adaptive management activities reflected in, or directly supporting accomplishment of, the Objectives and Performance Standards reflected in Section 6.5 of this Instrument. The Irrevocable Letter of Credit shall have the following general features, all as governed more specifically by Article III.D.1. of the MOA: the Letter of Credit applicable to each phase of the Bank shall be issued at a designated level of credit, as required by the MBRT for that particular phase, which level of credit may be reduced at the discretion of the MBRT as it determines that the objectives and performance standards of this Instrument are being timely met; the MBRT may make multiple drawings on the credit funds account to accomplish the purposes of the Letter of Credit; funds will be disbursed to, and all actions taken pursuant to a Letter of Credit shall be accomplished by, a Third Party Designee as delineated in the Agreement; and HB will be provided a period of time in which to undertake corrective action itself prior to the MBRT accessing a particular credit funds account. Notwithstanding the fact that the Letter of Credit applicable to a particular phase has been accessed, and full or partial remedial or corrective action has been taken by the Third Party Designee, HB shall remain responsible for the timely and effective achievement of all the Objectives and Performance Standards mandated in Section 6.5 of this Instrument.

- B. In addition, as provided in Article III.D.2. of the MOA, HB shall institute a Long-Term Management and Maintenance Endowment Fund, established and maintained through an escrow account, to fund management and maintenance actions as defined in Section 11.3 of this Instrument following the termination of Bank operational life. The Long-Term Management and Maintenance Endowment Fund shall be incrementally funded throughout the operational life of the Bank, with the funds disbursed to a Third Party Designee upon the Sponsor's relinquishment of responsibility for long-term maintenance and management of the Bank, for initiation and execution of the management and maintenance activities. The MBRT may also access the Long-Term Management and Maintenance Endowment Fund escrow account to accomplish long-term management or maintenance of the Bank during the interim transition period between termination of the operational life of the Bank and assignment of long-term management and maintenance responsibilities to the third party assignee.

The Long-Term Management and Maintenance Endowment Fund shall have the following general features, all as governed more specifically by Article III.D.2. of the MOA: HB shall fund the endowment by depositing in the escrow account a designated sum corresponding to each sale or transfer of mitigation credits, with flexibility for HB to accelerate contributions without penalty; once the Long-Term Management and Maintenance Endowment Fund is fully funded, the Sponsor shall be released from any further obligation to deposit a designated sum corresponding to each sale or transfer of credits; and HB shall continue to deposit funds in the Long-Term Management and Maintenance Endowment Fund, even after the operational life of the Bank has terminated, and even after the responsibility for accomplishing long-term management and maintenance has been assigned to the Third Party Designee, until all awarded

mitigation credits have been sold or transferred, or until the Long-Term Management and Maintenance Fund is fully funded, whichever occurs earlier.

HB shall provide an annual financial statement to the MBRT as part of the monitoring report by February 1 of each year. In the annual statement, HB shall discuss the status of each Irrevocable Letter of Credit and the associated credit funds account, and of the Long-Term Management and Maintenance Endowment Fund and the associated escrow account. HB shall assess the adequacy of the financial assurances to reasonably ensure the success of the SBMB and comply with the requirements of this MBI, and propose any adjustment to the financial assurances that HB deems appropriate in light of the requirements of this MBI. The MBRT will consider each proposal to adjust the financial assurances and provide HB a decision on that proposal within a reasonable amount of time. Approval of HB's proposal may not be unreasonably withheld.

#### **14.0 BANK OWNERSHIP**

All real property to be included within phases 1 and 2 of the SBMB is owned in fee simple by Habitat Bank, LLC (HB) and has been pledged for use in the SBMB consistent with this MBI. A portion of the buffer for phase 2 is owned by Walt DeJong as shown on the site plans. An easement for habitat restoration has been placed on this property's title. Title to portions of phase 3 may be sold to another party but the conservation easement required by performance standard 1B. will be placed on the land at the time it is added to the bank. HB shall be responsible for developing, operating, and maintaining the SBMB subject to the requirements of this MBI throughout the Bank's operational life, regardless of the ownership status of the underlying real property, unless the obligations and responsibilities under this MBI and the MOA are assigned to an approved third party as provided below in this section. The inclusion of the aforementioned properties in the SBMB and the granting of a conservation easement restricting future land uses for the benefit of the SBMB shall not convey or establish any property interest on the part of any party to this instrument nor to any purchaser of bank credits. The MBI does not authorize, nor shall it be construed to permit, the establishment of any lien, encumbrance, or other claim with respect to the property, with the sole exception of the right on the part of the USACE to require HB to implement elements of the MBI, including recording the conservation easement, required as a condition of the issuance of a permit under Section 404 of the Clean Water Act for discharges of dredged and fill material into waters of the United States associated with construction and operation and maintenance of the SBMB.

HB may transfer ownership of all or a portion of the SBMB to another party provided the MBRT expressly approves the transfer in writing. With the express advance and written approval of the MBRT, HB may assign its responsibilities and obligations under this MBI and the MOA to a third party, pursuant to Article VII.E. of the MOA. Such assignment will take effect, and will release HB of its obligations under this MBI and the MOA, only when the assignee has executed an MBI and an MOA with the Corps or Engineers and the Washington Department of Ecology, and after that third party assignee has established the required financial assurances pursuant to the requirements of the MOA. All responsibilities and obligations under this MBI and the MOA must reside in a single entity at any one time, and may not be severed or assigned in a piecemeal fashion. MBRT approval of the identity of the assignee shall not be unreasonably withheld. The physical ownership of bank lands and the operating rights to the SBMB (sponsorship) are separable components of the SBMB and may be transferred independently.

**15.0 BANK EXPANSION**

If future demand in WRIA 7 warrants, HB may request MBRT approval to expand the SBMB. The Bank Sponsor shall develop and submit to the MBRT an Addendum to this MBI and an Amendment to the MOA that include a description of the location and baseline physical and biological conditions of the expansion area and describe how the project would comply with the provisions of the MBI including benefit to the watershed; performance standards; success criteria; credit/debit determinations; changes to the service area; long-term management; monitoring, reporting, and remedial actions; financial assurances; and other elements of the MBI and MOA, as appropriate.

**16.0 MODIFICATION OF THE PROVISIONS OF THIS INSTRUMENT**

The provision of this Instrument may be modified as mutually agreed to by HB and the MBRT. If changes are made to Federal, State or local mitigation banking regulations or policies, HB has the right to request modifications to this MBI that incorporate those changes. Approval for these modifications will not be unreasonably withheld by the MBRT.

**17.0 NOTICE**

Any notice required to be given under this Banking Instrument may be given by enclosing the same in an envelope, first-class, postage-prepaid, addressed to the party to whom notice is to be given at the following address:

Habitat Bank:      Habitat Bank, LLC  
                             Mr. Victor Woodward  
                             15600 NE 173<sup>rd</sup> Street  
                             Woodinville WA 98072

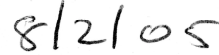
MBRT:                U.S. Army Corps of Engineers, Seattle District  
                             Regulatory Branch  
                             PO Box 3755  
                             Seattle, WA 98124-3755

Washington State Department of Ecology  
Wetland Mitigation Banking Program  
PO Box 47600  
Olympia, WA 98504-7600

IN WITNESS WHEREOF, the parties hereto have caused their authorized representatives to execute this Instrument as of the date indicated below.



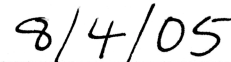
Victor Woodward  
Owner  
Habitat Bank, LLC



Date



Debra M. Lewis  
Colonel, Corps of Engineers  
District Engineer



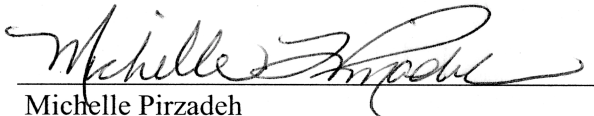
Date



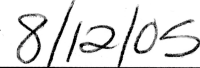
Gordon White  
Manager, Shorelines and Environmental Assistance Program  
Washington State Department of Ecology



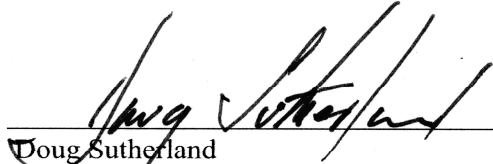
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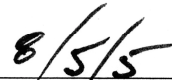
Michelle Pirzadeh  
Director, Office of Ecosystems, Tribal & Public Affairs  
U.S. Environmental Protection Agency, Region X



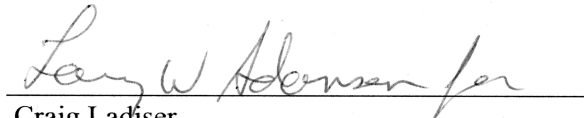
Date



Doug Sutherland  
Commissioner of Lands  
Washington State Department of Natural Resources



Date



Craig Ladiser  
Director, Department of Planning and Development Services  
Snohomish County



Date

# APPENDIX A:

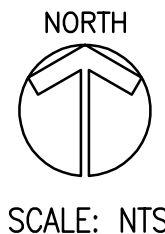
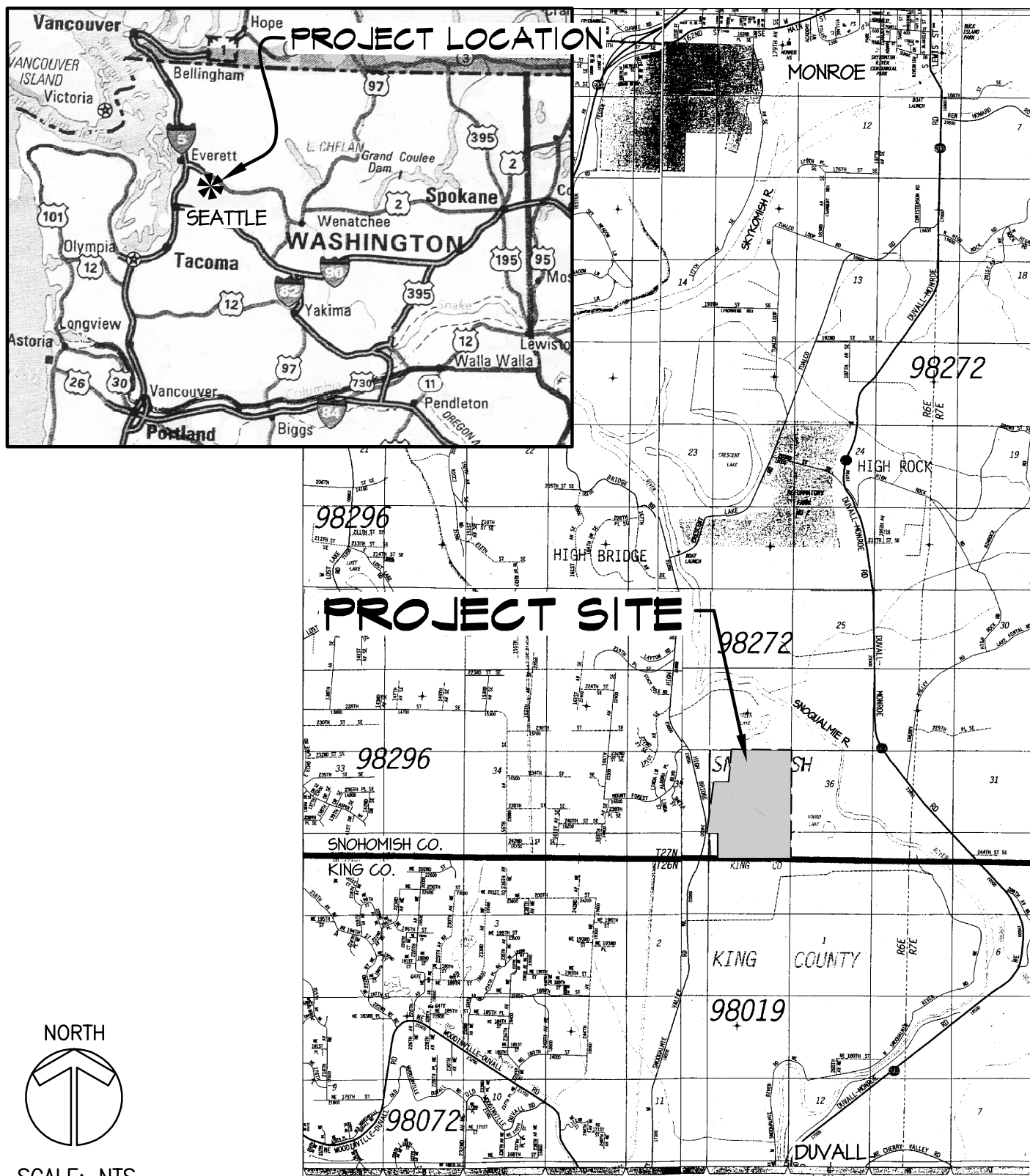
## List of Approved Plant Species

**Table 1. Candidate List of Plant Species for Wetlands Mitigation and Buffer Establishment, Snohomish Basin Wetlands Mitigation Bank.**

Plant Species			Cover Type							
Common Name	Scientific Name	Indicator Status	Wetland					Upland Buffer		
			Forest	Scrub	Wet Meadow	Marsh	Aquatic Bed	Forest	Scrub	Meadow
<b>TREES</b>										
Vine Maple	<i>Acer circinatum</i>	FAC-	X	X				X	X	
Big-leaf maple	<i>Acer macrophyllum</i>	FACU						X		
Red alder	<i>Alnus rubra</i>	FAC	X					X		
Paper birch	<i>Betula papyrifera</i>	FAC	X	X						
Hazelnut	<i>Corylus cornuta</i>	FACU						X	X	
Black hawthorn	<i>Crataegus douglasii</i>	FAC	X					X		
Oregon ash	<i>Fraxinus latifolia</i>	FACW	X							
Sitka spruce	<i>Picea sitchensis</i>	FAC	X					X		
Black cottonwood	<i>Populus trichocarpa</i>	FAC	X					X		
Bitter cherry	<i>Prunus emarginata</i>	FACU						X		
Douglas-fir	<i>Pseudotsuga menziesii</i>	FACU						X		
Western crabapple	<i>Pyrus fusca</i>	FACW	X	X						
Cascara	<i>Rhamnus purshiana</i>	FAC-	X	X				X	X	
Pacific willow	<i>Salix lasiandra</i>	FACW+	X	X						
Scouler willow	<i>Salix scouleriana</i>	FAC	X	X				X		
Western red cedar	<i>Thuja plicata</i>	FAC						X		
Western hemlock	<i>Tsuga heterophylla</i>	FACU-	X					X		
<b>SHRUBS</b>										
Serviceberry	<i>Amelanchier alnifolia</i>	FACU		X				X	X	
Red-osier Dogwood	<i>Cornus sericea</i>	FACW	X	X						
Salal	<i>Gaultheria shallon</i>	FACU						X	X	
Ocean Spray	<i>Holodiscus discolor</i>	NI (FACU)						X	X	
Black Twin-berry	<i>Lonicera involucrata</i>	FAC+		X				X	X	
Shining Oregongrape	<i>Berberis aquifolium</i>	NI (FACU)						X	X	
Dull Oregongrape	<i>Berberis nervosa</i>	NI (FACU)						X	X	
Indian Plum	<i>Oemleria cerasiformis</i>	FACU	X	X				X	X	
Pacific Ninebark	<i>Physocarpus capitatus</i>	FACW-	X	X						
Coast Black Gooseberry	<i>Ribes divaricatum</i>	FAC	X	X						
Swamp Gooseberry	<i>Ribes lacustre</i>	FAC+	X	X						
Red Currant	<i>Ribes sanguineum</i>	NI (FACU)						X	X	
Sweetbrier Rose	<i>Rosa eglanteria</i>	FACW	X	X						
Baldhip Rose	<i>Rosa gymnocarpa</i>	FACU						X	X	
Nootka Rose	<i>Rosa nutkana</i>	FAC	X	X				X	X	
Clustered Rose	<i>Rosa pisocarpa</i>	FAC	X	X				X	X	
Thimbleberry	<i>Rubus parviflorus</i>	FAC-						X	X	
Salmonberry	<i>Rubus spectabilis</i>	FAC+	X	X						
Hooker Willow (maritime)	<i>Salix hookeriana</i>	FACW-	X	X						
Scouler Willow	<i>Salix scouleriana</i>	FAC	X	X				X	X	
Sitka Willow	<i>Salix sitchensis</i>	FACW	X	X				X	X	
Blue Elderberry	<i>Sambucus cerulea</i>	FACU						X	X	
Red Elderberry	<i>Sambucus racemosa</i>	FACU						X	X	
Douglas Spiraea	<i>Spiraea douglasii</i>	FACW		X						
Snowberry	<i>Symphoricarpos albus</i>	FACU						X	X	

Red huckleberry	<i>Vaccinium parviflorum</i>	FACU		X				X	X	
<b>FORBS</b>										
Common yarrow	<i>Achillea millefolium</i>	FACU						X	X	X
Pearly everlasting	<i>Anaphalis margaritacea</i>	NI							X	X
Common California Aster	<i>Aster chilensis</i>	FAC						X	X	X
Lady-fern	<i>Athyrium filix-femina</i>	FAC	X	X				X	X	
Deer Fern	<i>Blechnum spicant</i>	FAC+	X	X						
Largeleaved avens	<i>Geum macrophyllum</i>	FACW-		X	X					
Duckweed	<i>Lemna minor</i>	OBL				X	X			
River bank lupine	<i>Lupinus rivularis</i>	FAC			X	X				
Skunk Cabbage	<i>Lysichitum americanum</i>	OBL	X	X	X					
Western Springbeauty	<i>Montia sibirica</i>	NL						X	X	
Yellow and Blue Forget me-not	<i>Myosotis discolor</i>	FACW	X	X	X					
Spatdock	<i>Nuphar polysepalum</i>	OBL				X	X			
Water-Lily	<i>Nymphaea odorata</i>	OBL				X	X			
Lady's thumb	<i>Polygonum persicaria</i>	FACW				X	X			
Sword Fern	<i>Polystichum munitum</i>	FACU						X	X	
Pondweed	<i>Potamogeton</i> sp.	OBL				X	X			
Bitterdock	<i>Rumex obtusifolius</i>	FAC			X					
Pacific silverweed	<i>Potentilla anserina</i>	OBL			X					
Arrowhead	<i>Sagittaria latifolia</i>	OBL				X	X			
Canada goldenrod	<i>Solidago canadensis</i>	FACU						X	X	X
Giant goldenrod	<i>Solidago gigantea</i>	FACW-	X	X	X					
Golden-eyed grass	<i>Sisyrinchium californicum</i>	FACW+	X	X	X					
Fringecup	<i>Tellima grandiflora</i>	NL						X	X	
Youth-On-Age	<i>Tolmiea menziesii</i>	FAC	X	X						
Common Cattail	<i>Typha latifolia</i>	OBL				X	X			
American vetch	<i>Vicia americana</i>	FAC	X	X	XX			X	X	X
<b>GRAMINOIDS</b>										
Spike bentgrass	<i>Agrostis exarata</i>	FAC	X	X	X			X	X	X
Rough bentgrass	<i>Agrostis scabra</i>	FAC	X	X	X			X	X	X
Water Foxtail	<i>Alopecurus geniculatus</i>	OBL			X	X				
American sloughgrass	<i>Beckmannia syzigachne</i>	OBL			X	X				
California brome	<i>Bromus carinatus</i>	NI (FACU)						X	X	X
Canada bluejoint	<i>Calamagrostis canadensis</i>	FACW+	X	X	X					
Water Sedge	<i>Carex aquatilis</i>	OBL			X	X				
Dewey's Sedge	<i>Carex deweyana</i>	FAC+	X	X						
Slough sedge	<i>Carex obnupta</i>	OBL	X	X	X	X				
Beaked sedge	<i>Carex utriculata</i>	OBL			X	X				
Tufted hairgrass	<i>Deschampsia cespitosa</i>	FACW	X	X	X					
Creeping spikerush	<i>Eleocharis palustris</i>	OBL			X	X				
Blue wildrye	<i>Elymus glaucus</i>	FACU						X	X	X
Red fescue	<i>Festuca rubra</i>	FAC	X	X	X			X	X	X
Tall mannagrass	<i>Glyceria elata</i>	OBL			X	X				
Baltic rush	<i>Juncus balticus</i>	FACW+			X					
Daggerleaf rush	<i>Juncus ensifolius</i>	FACW			X					
Slender rush	<i>Juncus tenuis</i>	FACW-			X					
Fowl bluegrass	<i>Poa palustris</i>	FAC	X	X	X			X	X	X
Rough bluegrass	<i>Poa trivialis</i>	FACW	X	X	X					
Hardstem Bulrush	<i>Scirpus acutus</i>	OBL				X				
Small-fruited bulrush	<i>Scirpus microcarpus</i>	OBL				X				

Sec. 35, 36, T 27 N, R 6 E.



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SNOHOMISH BASIN MITIGATION BANK  
CORPS PERMIT NO. 200300482  
FIGURE 1: Project Vicinity Map

APPLICATION BY: Habitat Bank, LLC  
15600 NE 173rd St.  
Woodinville, WA 98072

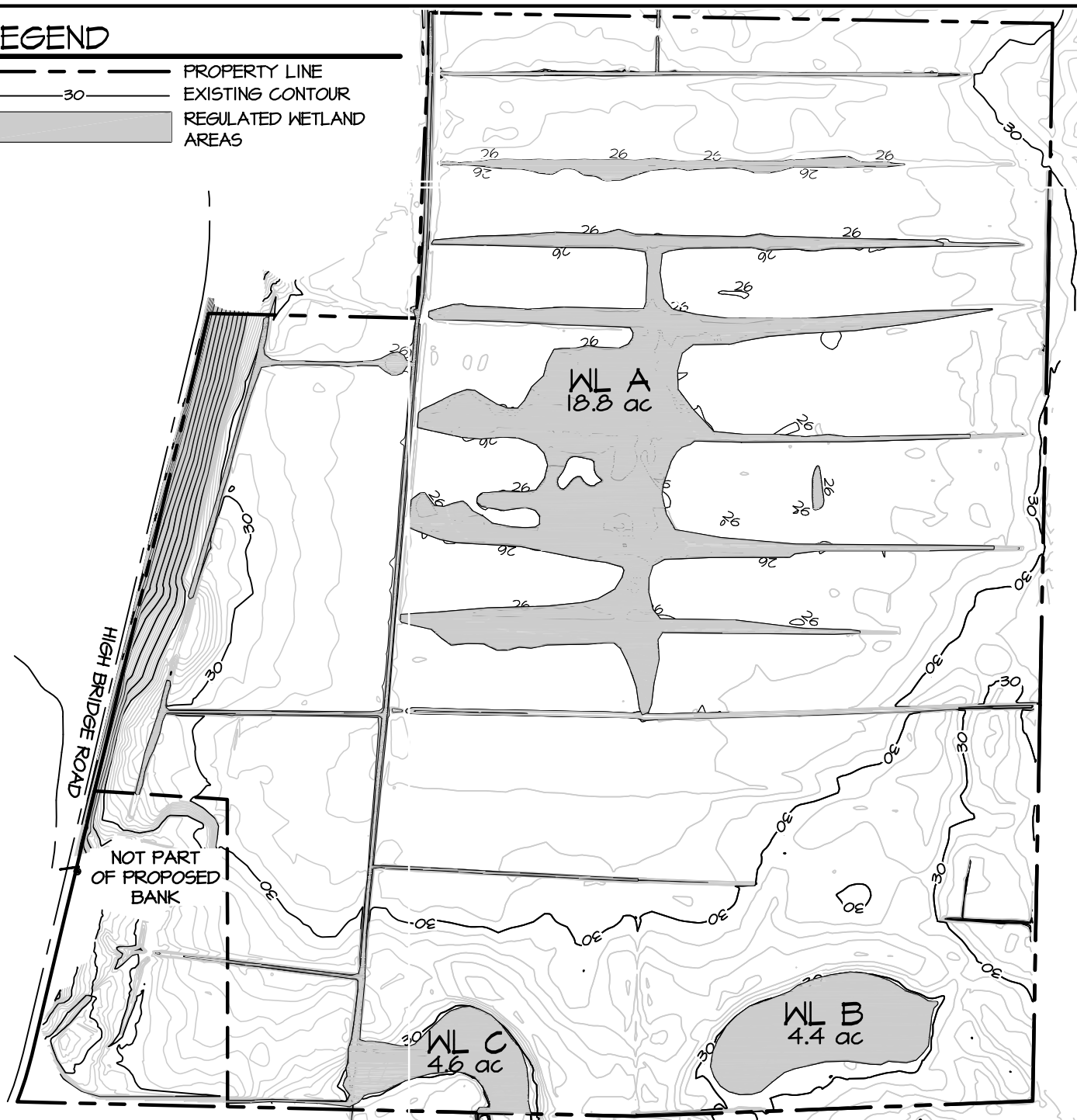
IN: Wetlands Adjacent to Snoqualmie River  
AT: High Bridge Road  
COUNTY OF: Snohomish STATE: Washington

FIGURE: 1 of 11 DATE: 19 July 2005

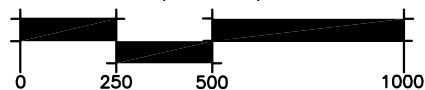


# LEGEND

-  PROPERTY LINE
-  EXISTING CONTOUR
-  REGULATED WETLAND AREAS



GRAPHIC SCALE  
( IN FEET )



SCALE: 1"=500'

NORTH



## NOTES:

1. Wetland boundaries were field located, not surveyed, by Talasaea Consultants in the winter of 2004.
2. Source drawing was modified by Talasaea Consultants for visual enhancement.



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SNOHOMISH BASIN MITIGATION BANK  
CORPS PERMIT NO. 200300482  
FIGURE 2: Regulated Wetlands Map

APPLICATION BY: Habitat Bank, LLC

15600 NE 173rd St.  
Woodinville, WA 98072

IN: Wetlands Adjacent to Snoqualmie River

AT: High Bridge Road  
COUNTY OF: Snohomish

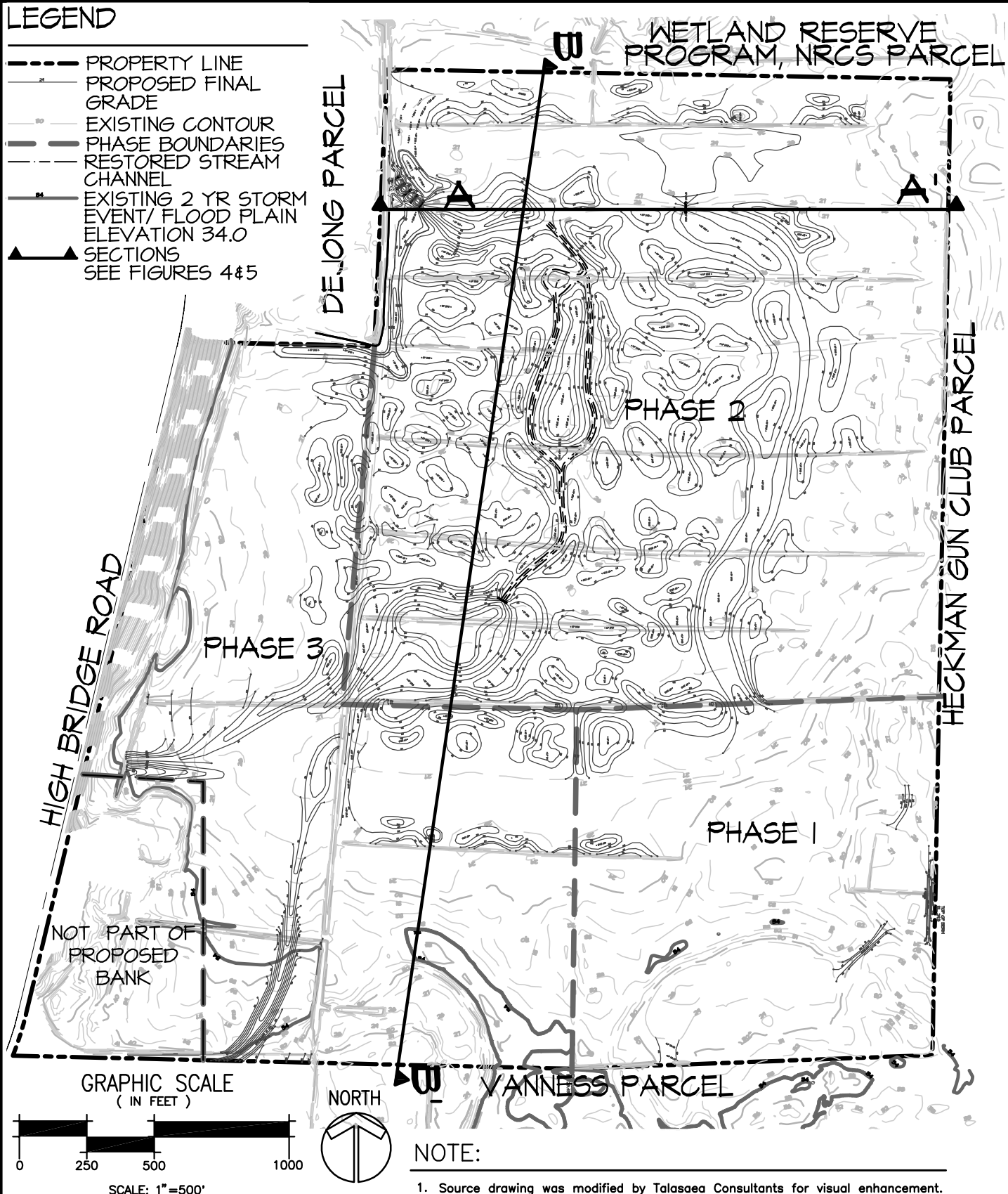
STATE: Washington

FIGURE: 2 of 11

DATE: 19 July 2005

# LEGEND

- PROPERTY LINE
- - - PROPOSED FINAL GRADE
- - - EXISTING CONTOUR
- - - PHASE BOUNDARIES
- - - RESTORED STREAM CHANNEL
- - - EXISTING 2 YR STORM EVENT/ FLOOD PLAIN ELEVATION 34.0
- ▲ SECTIONS SEE FIGURES 4&5



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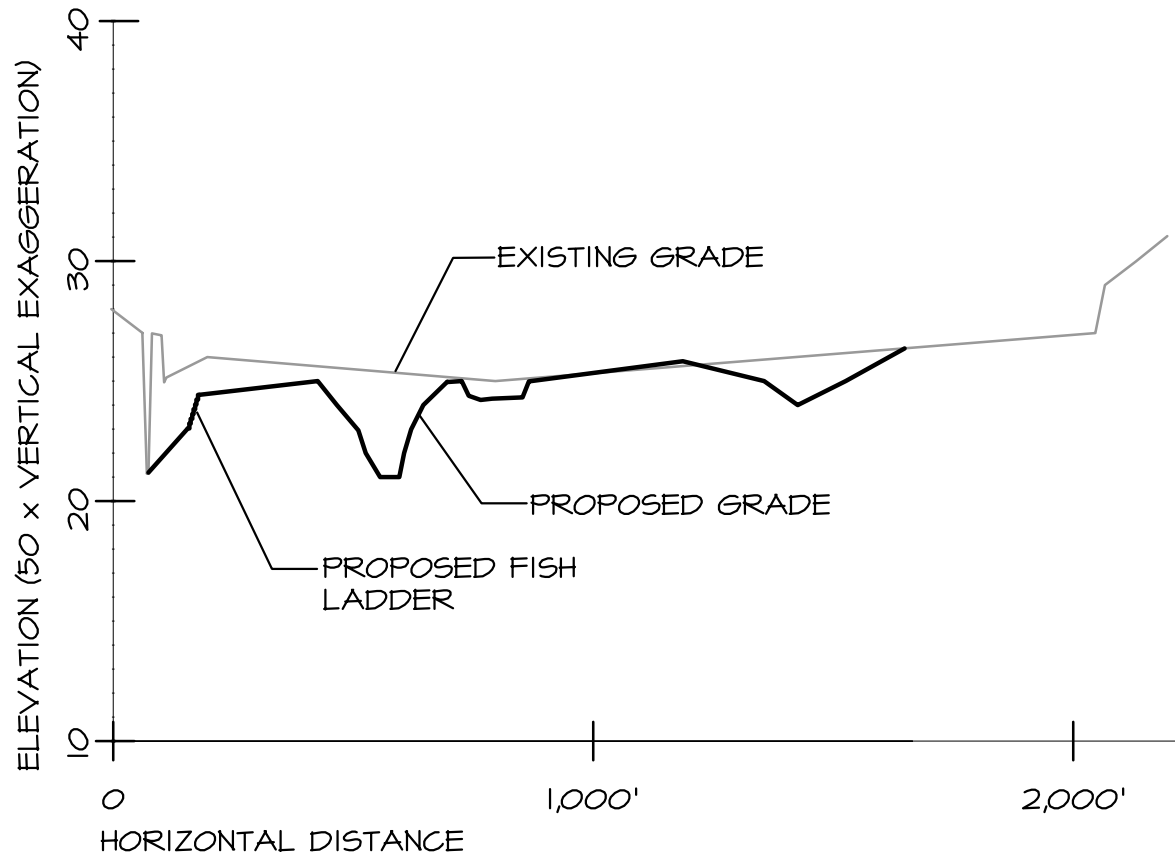
SNOHOMISH BASIN MITIGATION BANK  
CORPS PERMIT NO. 200300482  
FIGURE 3: Conceptual Site Grading Plan

APPLICATION BY: Habitat Bank, LLC  
15600 NE 173rd St.  
Woodinville, WA 98072

IN: Wetlands Adjacent to Snoqualmie River  
AT: High Bridge Road  
COUNTY OF: Snohomish STATE: Washington

FIGURE: 3 of 11

DATE: 19 July 05



### SECTION A - A'

(See Figure 3 for Section location on Plan)

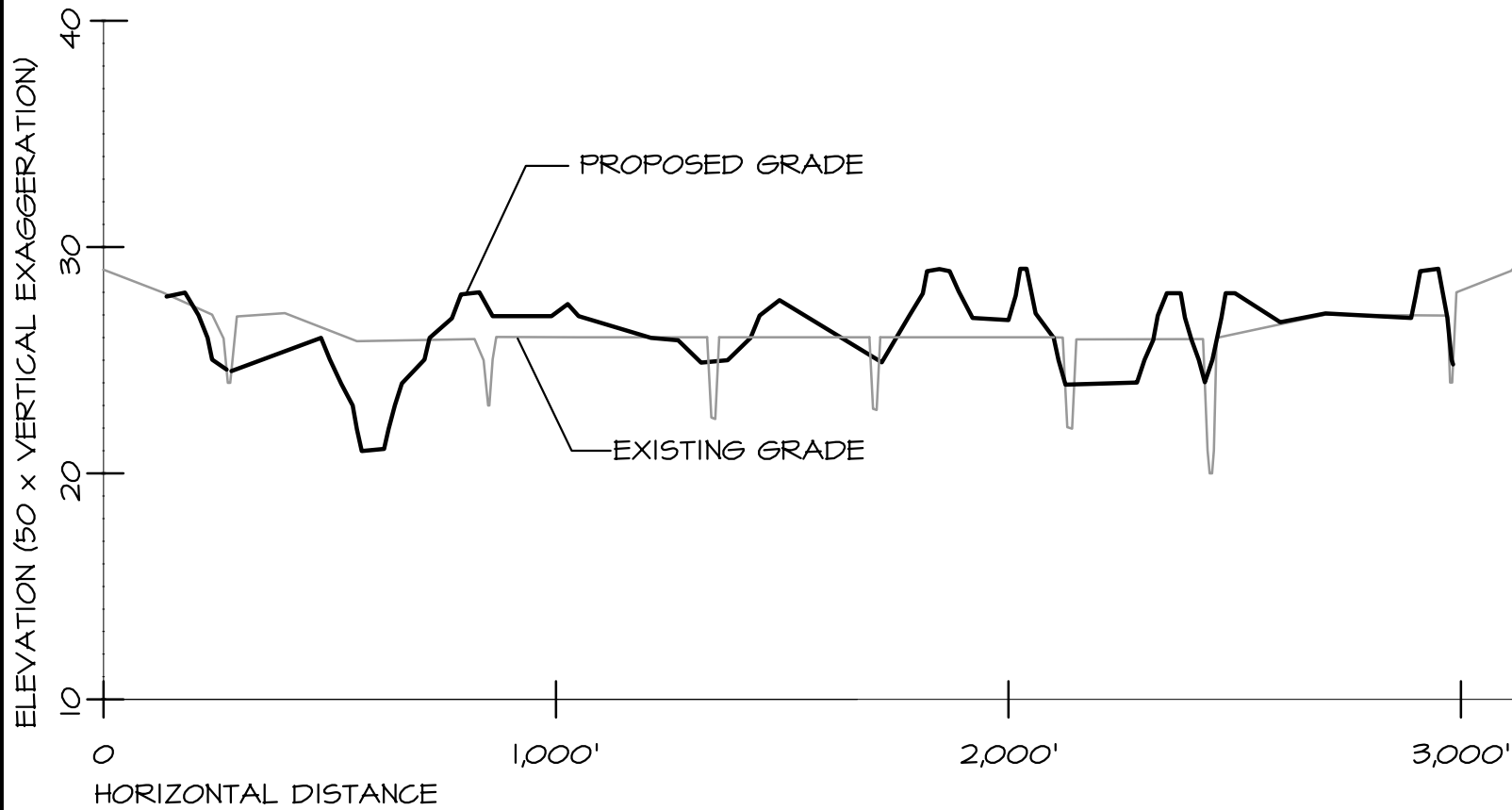


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SNOHOMISH BASIN MITIGATION BANK  
CORPS PERMIT NO. 200300482  
FIGURE 4: Site Construction Detail - Cross-Sectional View A-A'

APPLICATION BY: Habitat Bank, LLC  
15600 NE 173rd St.  
Woodinville, WA 98072  
IN: Wetlands Adjacent to Snoqualmie River  
AT: High Bridge Road  
COUNTY OF: Snohomish STATE: Washington  
FIGURE: 4 of 11 19 July 2005



### SECTION B - B'

(See Figure 3 for Section location on Plan)



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SNOHOMISH BASIN MITIGATION BANK

CORPS PERMIT NO. 200300482

FIGURE 5: Site Construction Detail - Cross-Sectional View B-B'

APPLICATION BY: Habitat Bank, LLC

15600 NE 173rd St.

Woodinville, WA 98072

IN: Wetlands Adjacent to Snoqualmie River

AT: High Bridge Road

COUNTY OF: Snohomish STATE: Washington

FIGURE: 5 of 11

19 July 2005

1. FOR LOG WEIRS 1 & 2, USE 36" dia. X 34' CEDAR OR FIR LOG, BARK INTACT.  
2. FOR LOG WEIRS 3-5, USE 24" dia. X 34' CEDAR OR FIR LOG, BARK INTACT.  
3. FOR WEIRS 1-5, SEE DETAILS 5 & 6 ON SHEET W2.3 FOR LOG WEIR CHANNEL IRON AND NOTCH/SILL ELEVATIONS. NOTCHES SHALL BE CUT PER DETAIL 1c BELOW.  
4. FOR LOG WEIRS 6 & 7, USE 18" X 34' CEDAR OR FIR LOG, BARK INTACT WITH A DECLINED (upstream) TAPERED NOTCH (see Detail 1c below).

SECURE 20mi PVC LINER TO LOG WITH 1"x2" CEDAR LATH BOARD. ATTACH TO LOG WITH 8d GALVANIZED NAILS EVERY 6".

SECURE LOG INTO BANK AND ANCHOR BURIED ENDS OF LOG WITH 1-2 MAN ROCK

PLACE ROCK MIX A MINIMUM OF 12 INCHES DEEP IN DOWNSTREAM POOL AREA FOR EACH LOG. ROCK MIX SHALL CONSIST OF ROUNDED, UNIFORMLY-GRADED GRAVEL WITH A SIZE COMPOSITION OF:  
15 PERCENT OF 4.0 TO 3.0 INCHES  
40 PERCENT OF 3.0 TO 1.5 INCHES  
45 PERCENT OF 1.5 TO 0.25 INCHES

TABLE 1: HELICAL SOIL SCREW ANCHOR QUANTITIES

LOG WEIR	LENGTH OF LOG	DIAM. OF LOG	NUMBER OF ANCHORS
1	34 FEET	36 INCHES	6
2	34 FEET	36 INCHES	6
3	34 FEET	24 INCHES	3
4	34 FEET	24 INCHES	3
5	34 FEET	24 INCHES	3
6	34 FEET	18 INCHES	2
7	34 FEET	18 INCHES	2

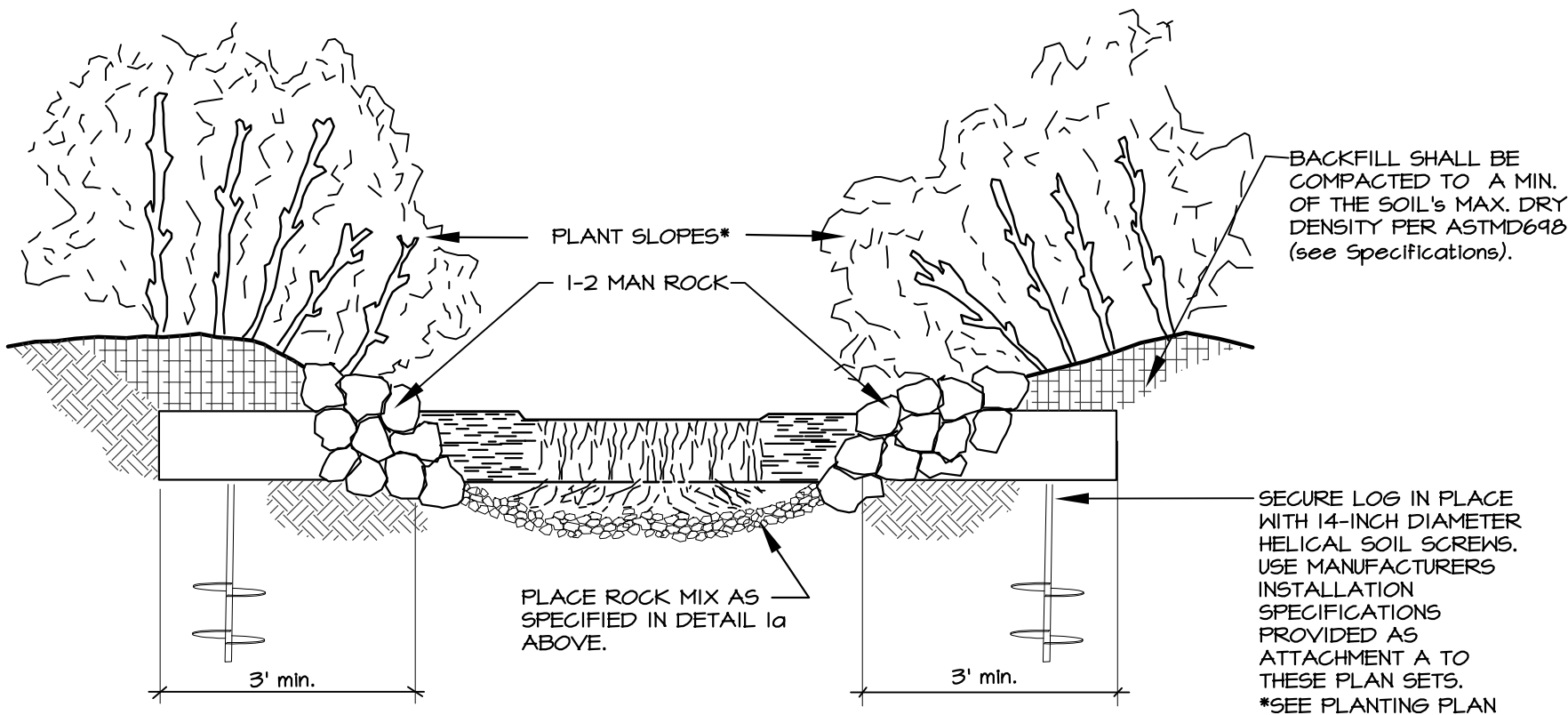
SUBGRADE

SECURE LOG IN PLACE WITH 14-INCH DIAMETER HELICAL SOIL SCREWS. THE NUMBER OF SCREWS PER LOG ARE LISTED IN TABLE 1 BELOW. USE MANUFACTURERS INSTALLATION SPECIFICATIONS PROVIDED AS ATTACHMENT A TO THESE PLAN SETS.

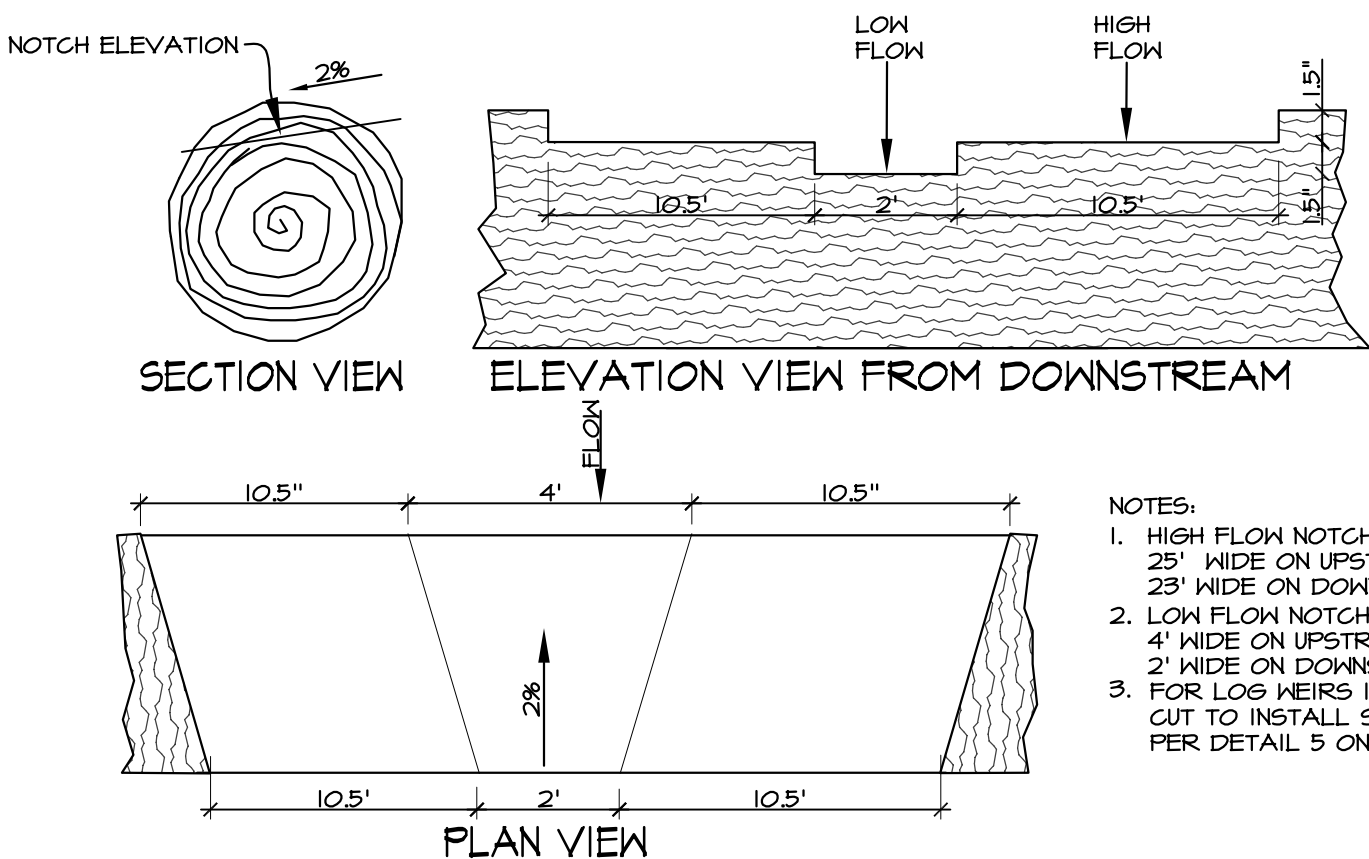
NOTES:

1. HELICAL SOIL SCREW ANCHORS SHALL BE 14-INCH DIAMETER.  
2. EACH ANCHOR SHALL BE ADVANCED A MINIMUM DEPTH OF TEN FEET BELOW GRADE.  
3. ANCHORS SHALL BE PLACED EVENLY ALONG THE LENGTH OF THE LOG WEIR WITH A MINIMUM SPACING OF 3.5 FEET.  
4. USE MANUFACTURES SPECIFICATIONS FOR INSTALLATION GUIDELINES.

1a LOG WEIR CROSS SECTION  
N.T.S.



1b LOG WEIR LONGITUDINAL SECTION  
N.T.S.



NOTES:

1. HIGH FLOW NOTCH SHOULD BE 1-1/2" DEEP, 25' WIDE ON UPSTREAM SIDE OF LOG AND 23' WIDE ON DOWNSTREAM SIDE OF LOG.  
2. LOW FLOW NOTCH SHOULD BE 1-1/2" DEEP, 4' WIDE ON UPSTREAM SIDE OF LOG AND 2' WIDE ON DOWNSTREAM SIDE OF LOG.  
3. FOR LOG WEIRS 1-5, NOTCHES SHALL BE CUT TO INSTALL STEEL CHANNEL IRONS PER DETAIL 5 ON SHEET W2.3.

1c TAPERED NOTCH DETAIL FOR LOG WEIR'S  
N.T.S.



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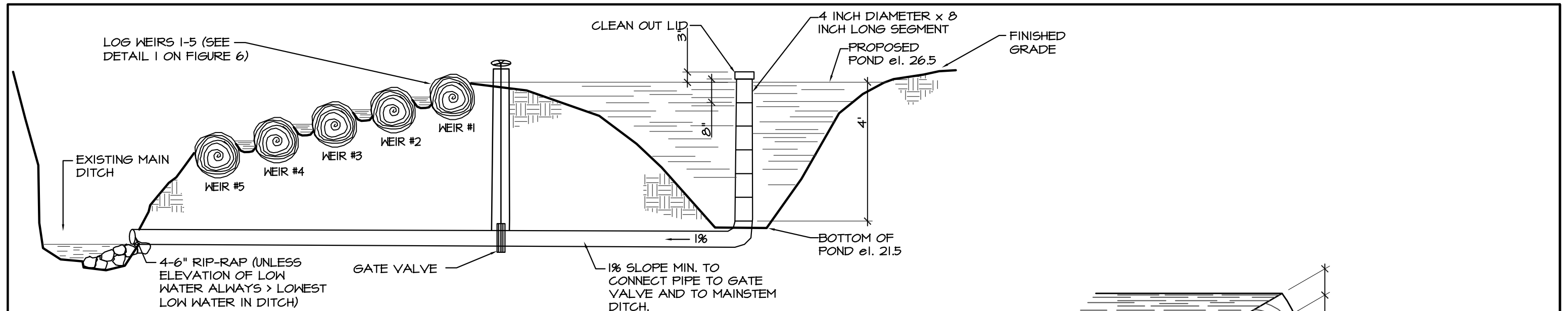
SNOHOMISH BASIN MITIGATION BANK  
CORPS PERMIT NO. 200300482  
FIGURE 6: LOG WEIR (TYP), DETAIL 1

APPLICATION BY: Habitat Bank, LLC  
15600 NE 173rd St.  
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IN: Wetlands Adjacent to Snoqualmie River  
AT: High Bridge Road  
COUNTY OF: Snohomish STATE: Washington

FIGURE: 6 OF 11

DATE: 19 July 2005

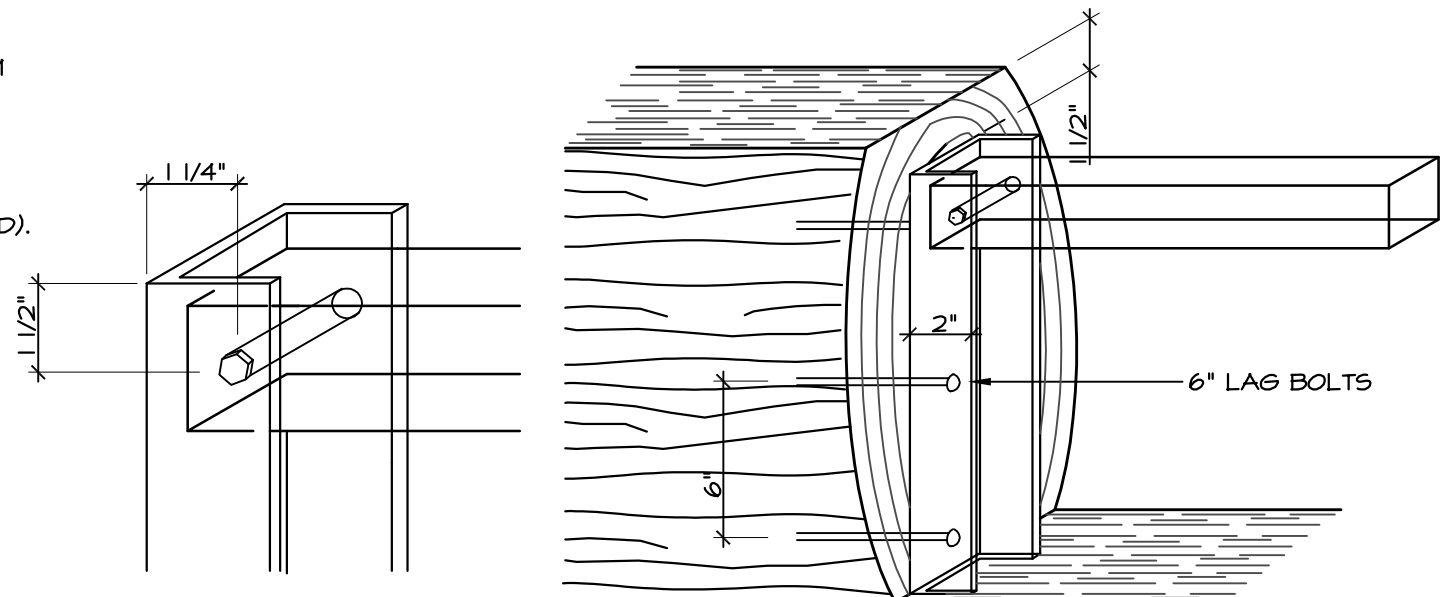


NOTES:

1. INSTALL STANDPIPE USING 4 INCH ROUND WHITE PVC PIPE CONSTRUCTED WITH SIX- 8 INCH SEGMENTS.
2. STANDPIPE SHOULD BE A MINIMUM OF 3 INCHES ABOVE PROPOSED POND ELEVATION.
3. ATTACH A 4 INCH DIAMETER LID TO TOP OF STANDPIPE.
4. CONNECT STANDPIPE TO GATE VALVE (LENGTH OF PIPE TO GATE VALVE TO BE DETERMINED IN THE FIELD).
5. PIPE TO HAVE A MINIMUM 1% SLOPE TO GATE VALVE.

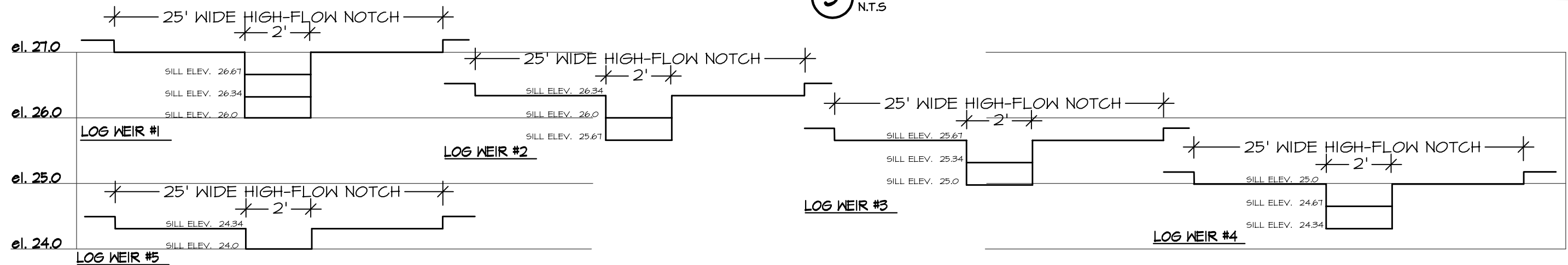
## 2 SEGMENTED STANDPIPE & GATE VALVE POND DRAIN

N.T.S.



## 3 LOG WEIR'S 1-5 -- STEEL CHANNEL IRON TO LOG CONNECTION DETAIL

N.T.S.



## 4 LOG WEIR SILL PROFILES

N.T.S.



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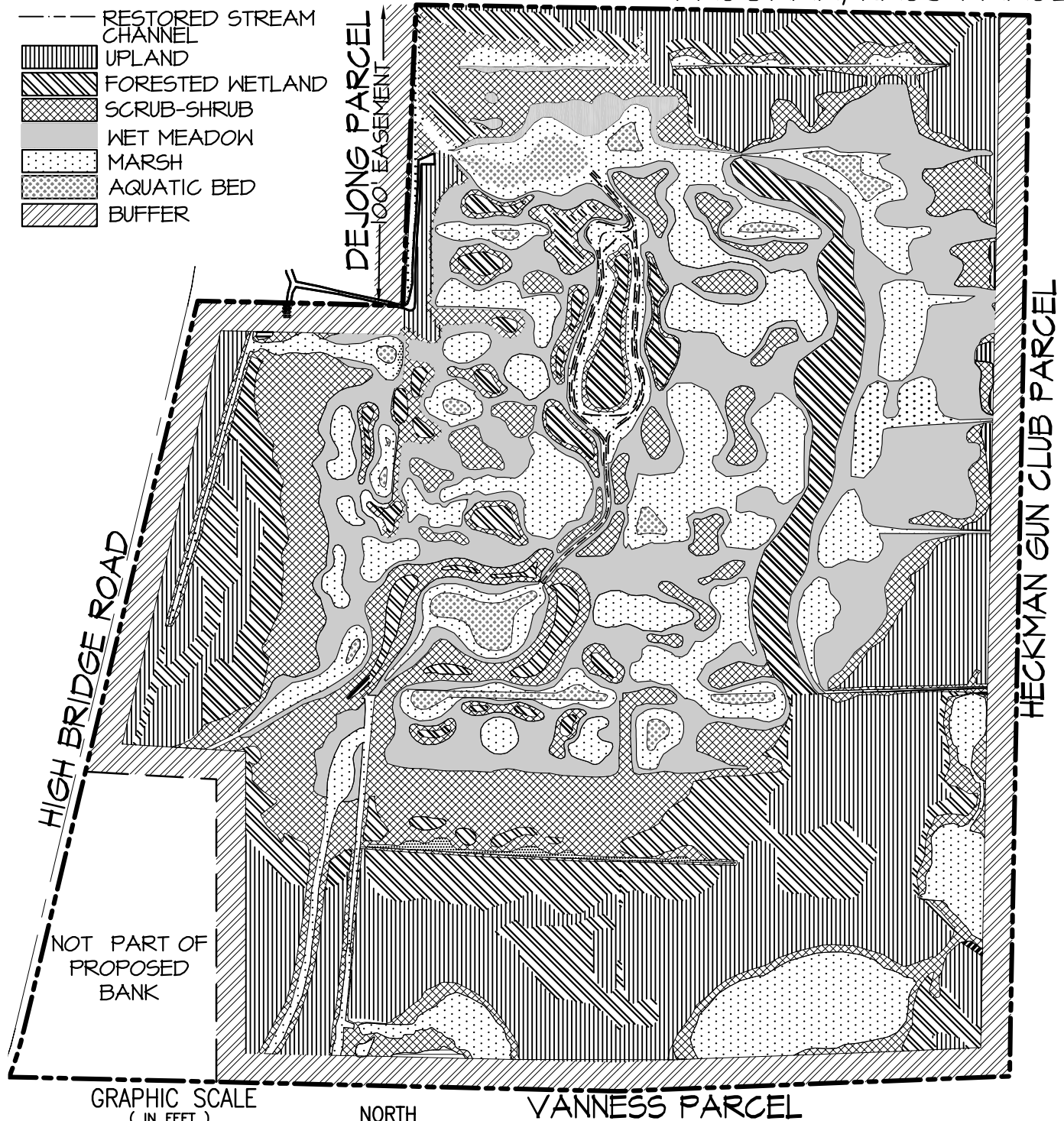
SNOHOMISH BASIN MITIGATION BANK  
CORPS PERMIT NO. 200300482  
FIGURE 7: LOG WEIRS (TYP.), DETAILS 2-4

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Woodinville, WA 98072  
IN: Wetlands Adjacent to Snoqualmie River  
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FIGURE: 7 of 11 19 July 2005

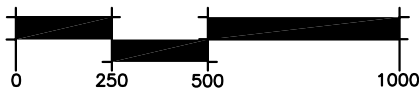
# LEGEND

- PROPERTY LINE
- RESTORED STREAM CHANNEL
- [Hatched Box] UPLAND
- [Cross-hatched Box] FORESTED WETLAND
- [Dotted Box] SCRUB-SHRUB
- [Solid Grey Box] WET MEADOW
- [Stippled Box] MARSH
- [Horizontal Line Box] AQUATIC BED
- [Diagonal Line Box] BUFFER

WETLAND RESERVE PROGRAM, NRCS PARCEL



GRAPHIC SCALE  
( IN FEET )



SCALE: 1"=500'

NORTH



## NOTE:

1. Source drawing was modified by Talasaea Consultants for visual enhancement.



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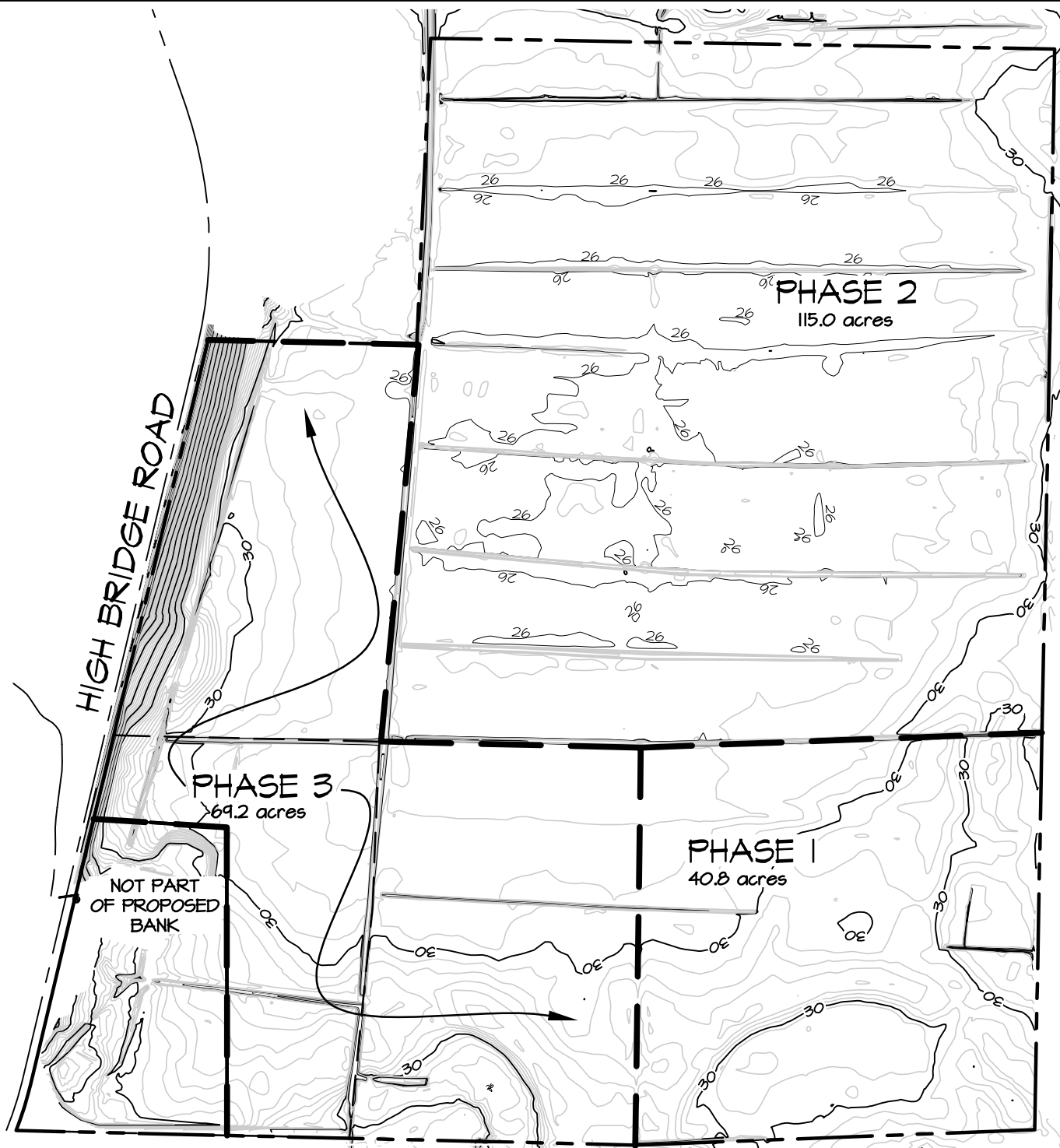
SNOHOMISH BASIN MITIGATION BANK  
CORPS PERMIT NO. 200300482  
FIGURE 8: Conceptual Site Planting Plan

APPLICATION BY: Habitat Bank, LLC  
15600 NE 173rd St.  
Woodinville, WA 98072

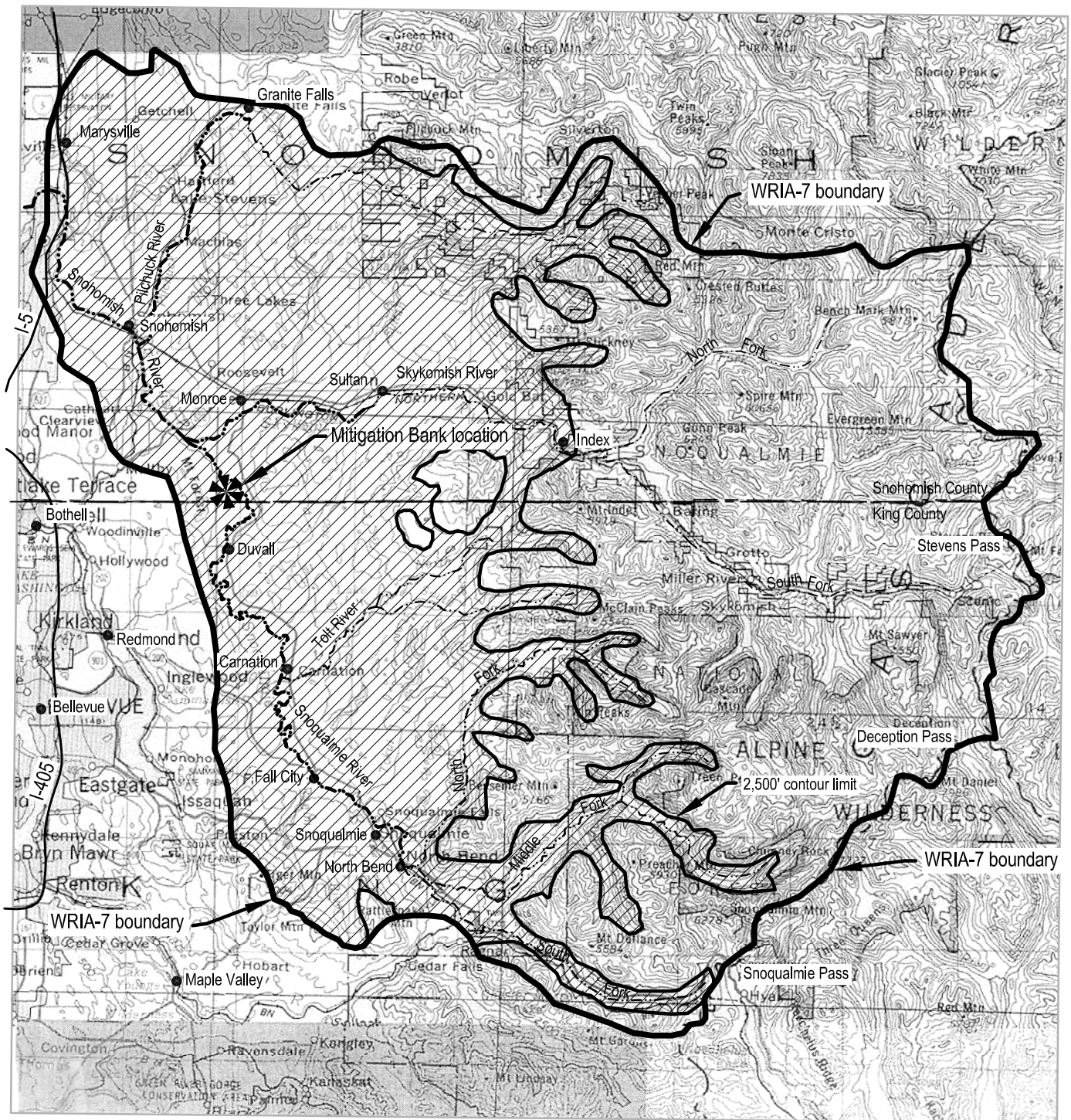
IN: Wetlands Adjacent to Snoqualmie River  
AT: High Bridge Road  
COUNTY OF: Snohomish STATE: Washington

FIGURE: 8 of 11

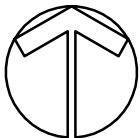
DATE: 19 July 2005







NORTH



SCALE: NTS



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SNOHOMISH BASIN MITIGATION BANK  
CORPS PERMIT NO. 200300482  
FIGURE 10: Service Area Map

APPLICATION BY: Habitat Bank, LLC  
15600 NE 173rd St.  
Woodinville, WA 98072

IN: Wetlands Adjacent to Snoqualmie River  
AT: High Bridge Road  
COUNTY OF: Snohomish STATE: Washington

FIGURE: 10 of 11 DATE: 19 July 2005

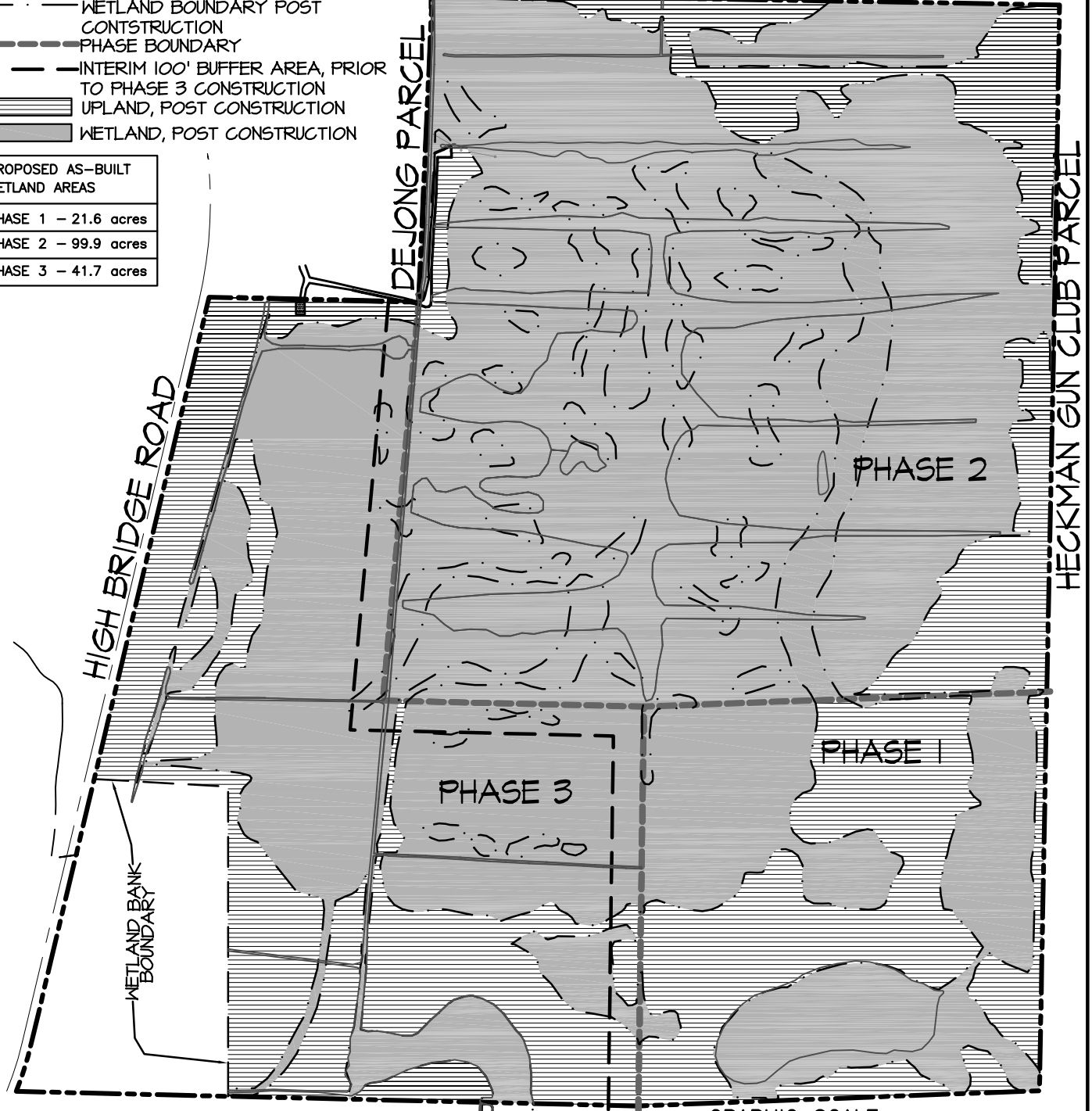
# LEGEND

- PROPERTY LINE
- EXISTING WETLAND BOUNDARY
- WETLAND BOUNDARY POST
- CONSTRUCTION
- PHASE BOUNDARY
- INTERIM 100' BUFFER AREA, PRIOR TO PHASE 3 CONSTRUCTION
- ===== UPLAND, POST CONSTRUCTION
- ===== WETLAND, POST CONSTRUCTION

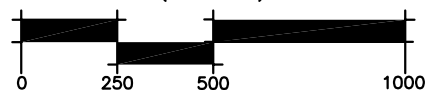
## PROPOSED AS-BUILT WETLAND AREAS

PHASE 1 - 21.6 acres
PHASE 2 - 99.9 acres
PHASE 3 - 41.7 acres

## WETLAND RESERVE PROGRAM - NRCS PARCEL

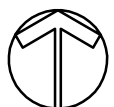


GRAPHIC SCALE  
( IN FEET )



SCALE: 1"=500'

NORTH



## NOTE:

1. Source drawing was modified by Talasaea Consultants for visual enhancement.



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SNOHOMISH BASIN MITIGATION BANK  
CORPS PERMIT NO. 200300482  
FIGURE 11: RESTORED WETLANDS

APPLICATION BY: Habitat Bank, LLC  
15600 NE 173rd St.  
Woodinville, WA 98072

IN: Wetlands Adjacent to Snoqualmie River  
AT: High Bridge Road  
COUNTY OF: Snohomish STATE: Washington

FIGURE: 11 of 11

DATE: 19 July 05